Industrial Equipment News

IEN

FOUNDED 1933

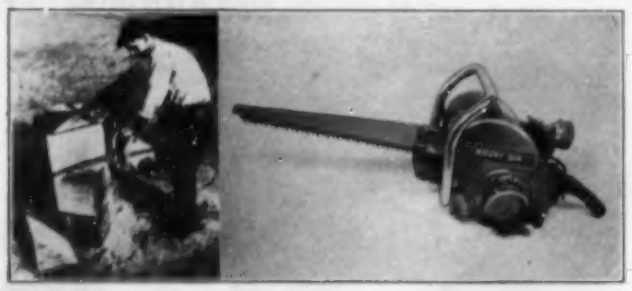
ORIGINAL REPORTER OF *What's New* IN EQUIPMENT, PARTS, MATERIALS

AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

If you write maker identify as **IEN - 6153**

WOOD WORKING . . Power saw "floats" reciprocating blade through work

Source: WRIGHT POWER SAW & TOOL CORP.
292 Longbrook Ave., Dept. IEN, Stratford, Conn.



Bulletin 401

High speed, 4,800 rpm. of the direct connected two-cycle gasoline engine in this new Wright saw, combines with dynamic balance to remove all "kick" and any need to maintain the saw against a backup shoulder while it is making a power cut. In effect the blade "floats" through the work. It delivers a steady stream of cuttings toward the rear to leave a clean mill surface on the wood.

The blade hooks into position in the driving head and rides in a slot in the stationary backup blade. This blade is slightly narrower than the 5/32-in. kerf of the toothed blade. The latter can be removed, sharpened and replaced, without need for special tools, in about 30 seconds. The engine is fitted with a carburetor that permits operation in any position. It carries 1½ qt. of gasoline to which lubricant is added. No other lubrication is required. Weight is about 24 pounds. The top speed of 4,800 rpm. is governor controlled.

The operator picks up the machine by the front handle and the trigger equipped handle at the rear and rests it on a suitable support. Then, holding it by the handle at the rear, he pulls the knob at the right hand side to start the engine. He keeps the engine operating by depressing the trigger, picks up the saw and positions it on the work.

Cutting action starts immediately without any sign of kicking or bucking. Releasing the trigger immediately shuts off the ignition and the engine stops. Application can be made in any type of wood from heavy timber and live trees to finished lumber. List price is $295 for the machine and one blade. Additional blades list at about $9.

If you write maker identify as **IEN - 6154**

FASTENING . . Teflon Fiberglas cord and tape for lacing, sewing, tying

Source: HITEMP WIRES INC.
26 Windsor Ave., Dept. IEN, Mineola, N. Y.

Technical data upon request

Newbroc trade names a new combination of continuous filament Fiberglas impregnated with a uniform film of teflon. Cords are available from stock in sizes from 0.0046 to 0.076 in. in diameter. Tape is in stock widths from 3/32 to ½ inch. Other sizes can be supplied to order.

The 0.02-in. cord has tensile strength a little under 70 lb. minimum, a loop strength of about 18 lb. and a knot strength of 15 pounds. Current applications are in tying coils, motor windings and harness lacings that are to be impregnated with high temperature varnishes, sewing canvas articles, shoes, luggage. The material will withstand temperatures between minus 90 and 200 deg. C. It is non-inflammable and will not support fungus growth. It is chemically inert to commercial solvents that may come in contact.

New Reader Service Form
to get you fast action on your specific information requests. See pages 16, 104

If you write maker identify as **IEN - 6155**

CLEANING . . Abrasive blast machine delivers grit in vacuum pick-up head

Source: VACU-BLAST COMPANY
Box 885-R, Dept. IEN, Belmont, Calif.

Rolls to the job

V-B Junior is a new portable assembly of the company's Vacu-Blaster, previously described IEN-8075-46. The new machine, like the original one, employs metallic grit to remove dirt, paint, scale from metallic and non-metallic surfaces. It also employs vacuum to retrieve the grit and pick up the dirt caused by the cleaning operation so none can escape.

The grit and dirt are returned to the machine where the grit is separated to go back into the delivery line and the dirt is accumulated in a collector for removal at intervals. Operation is on a compressed air line to 125 pounds.

The blast head is an assembly of carbide nozzle surrounded by a vacuum housing. This housing carries a rubber collar fitted with a circular brush. The brush bears on the surface to be cleaned and permits entrance of air around the nozzle to prevent escape of dust from the head and to provide for vacuum intake. Control is at a valve back of the head.

If you write maker identify as **IEN - 6156**

WHEELS . . Complete assemblies or tires only for industrial trucks

Source: MITCHELL INDUSTRIAL TIRE CO.
Box 468, Dept. IEN, Chattanooga, Tenn.

Ask about free trial

Rubber fabric pads are secured together under high pressure with an internal steel core to form the tire section in this new wheel assembly. The individual pads maintain excellent traction under difficult conditions. There is no stoppage due to puncture or blowout. The pads are resilient to absorb shock combined with ability to carry capacity loads and to roll and steer easily. The tires will fit any split wheel or flat base rim or wheel. They can be mounted by the user in the former case or by the user's distributor in the latter case. Direct factory shipment can be made, mounted to specification, using your rims or wheels. You can return your usable wheels or rims for credit. Regular sizes range from 4.00 by 8 to 8.25 by 15. Mine and lumber sizes range from 6.00 by 9 to 8.25 by 15.

If you write maker identify as **IEN - 6157**

A new product service is now available to manufacturers who desire to get in touch with inventors holding patents for sale or for lease on a royalty basis. It consists of a 60-page brochure, the Inventors' Sales Bulletin, in which are listed approximately 100 firms offering to purchase accepted inventions. Under each firm's name and address is the type of product it desires. Other manufacturers are invited to list the products they would like. The Bulletin is published at frequent intervals and lists at $2. It makes no charge to manufacturers for the listings. It circulates among inventors. Address V. D. Angerman, Publisher, Science and Mechanics Magazine, 450 East Ohio St., Dept. IEN, Chicago 11, Ill.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . *See Page 50*

JUNE, 1954
VOL. 22 No. 6

PRODUCT FINDING INDEX

What do you need? . . . check this complete subject index for your current product needs. Asterisks (*) after page numbers mean editorial items. Others refer to advertisements.

ABRASIVES.....38, 41, 47, 87
Adhesives 67, 78*
Air Conditioning 12*, 116*
Alloys 20*, 22, 58, 78*
Aluminum 20*, 56, 63
Automation Engineering.....44, 45

BALLS, METAL.....60
Band Saw Guides.....10
Batteries 20*, 21*, 78*
Bearings 2, 42, 44, 65, 66, 71, 78*, 81
Bellows, Metal.....61, 77, 78*
BELTS
Conveyor.....29, 45*, 49, 112
Dressings 58
Fastenings 97*
Transmission 3, 48
BENCHES 73*
Tops 72, 92
Bending 6, 22, 34, 49, 51, 78*, 112
Bimetal 35
Bins 10*, 19, 95
Blowers and Fans 9, 27*, 51, 64, 69, 120
Boards, Bulletin 80
Boilers.....34, 40*, 71
Bolts.....51, 76*, 90, 91, 103
BOOTHS, Spray 55
Telephone 56
Boring 31
Boxes.....30, 39, 61, 90
Brazing 2, 59
Bronze 11
BUCKETS, Clamshell.....103
Conveyor 34
Buildings....55, 58*, 73, 80, 90, 98*
Burring.....78*, 99, 111*
Bushings, Drill 59

CABINETS.....4, 78*, 91*, 101
Cable, Electric.....3, 8*, 13, 15, 30*, 42, 67, 78*, 78, 111
Calculating 26, 68*
Cans 77
Capacitors 87
Carbon Parts 70
Cars 23
Casters.....37, 55, 85, 88, 90, 98*
Castings.....21*, 58, 78*
Cement, Iron.....19, 26*
CHAIN
Bead 113
Fittings 40
Load 67
Chucks.....7, 67, 87
Circuit Breakers 69
Circuits, Electric 97*
Clamps 3, 4, 8, 50, 57, 67, 105*, 110*
CLEANING
Blast.....1*, 38, 52, 69, 107
Blower 9, 69
Floor 22, 36, 43, 54, 78*, 84, 104, 118
Materials 23*, 27, 52, 62*, 64*, 68, 72, 93, 119
Rotary 95
Spray 27
Tube 40
Vacuum 9, 36, 43, 62, 69, 79, 114*
Washing.....55, 90*, 98
Clothing, Protective.....32*, 107*
Clutches.....8*, 45, 53, 78*
Collars, Shaft 113
Communicating.....56, 63, 96
Comparators 10*, 75, 89, 104*, 115
Compressors 18, 19, 33, 38*, 73, 80, 100
Conductors, Electric.....3, 8*, 13, 15, 30*, 37, 42, 67, 78, 97*, 111
Conduit Fittings 100
Connectors, Electric.....20, 27, 32*, 38, 52*, 55*, 60, 70, 84, 96, 109*, 111
Construction.....11, 48*, 50, 59*
CONTROLS
Engine 74
Flame 48, 95
Flow 68, 78*
Liquid Level 79*, 120
Machine Tool 41
Positioning 15*, 36*, 42*, 51, 53, 66, 72*, 78*
Pressure 35, 59, 84, 102*, 109, 112
Process 21*, 52*
Production.....38, 79*, 94, 107
Temperature.....26, 80, 101
Vacuum 93*
CONVEYING
Belt 18*, 29, 40, 45*, 49, 71, 79*, 100*, 111, 112
Bucket 34
Flight 35
Overhead 6, 11, 14, 39*, 79*, 89
Roller 6, 8, 48*, 60*, 62*, 71, 73, 78
Screw 88
Wheel 73, 120
Cooling 3, 79*
Corrosion Proofing.....11, 53, 66, 76*, 90, 93, 96, 99*, 104, 108, 109*
Counting 23, 25, 45, 50, 72*, 77, 79*, 90*, 100*
Couplings, Shaft.....18, 70, 104
Covers, Dock 64
Cranes....35, 46, 49, 79*, 108, 110*
Creams, Hand 66, 83
Crimping 51
Crushing 18
CUTTING
Machines.....30, 49, 58*, 79, 91
Tools.....5, 54, 68*, 76*, 99, 101
Tool Holders 81*
Cylinders, Power....4, 21*, 21, 31, 33, 46, 65, 79*, 94, 102, 105

DEGREASING 98
DETECTORS, Flaw 69*
Metal 93
Die Castings 70
Dispensing....11*, 14, 44*, 61, 116
Dockboards 95
DOORS 14
Hardware 79
Operators 7
Drafting.....3, 37*, 56*
DRILLING
Bushings 59, 79*
Heads.....14*, 79*, 103, 116
Jigs 21
Machines 8, 33, 35*, 37*, 41, 46, 87*
Tools.....5, 15*, 68, 97
Drivers, Insert 25
DRIVES
Adjustable Speed.....11, 13
Components 3, 7, 8*, 9*, 18, 26, 28, 45, 48, 53, 61*, 63, 70, 71, 75, 76, 79*, 88, 89, 103, 104, 113
Hoist 50
Speed Reducer.....13*, 16, 23*, 43, 54, 63, 74*
Variable Speed.....3*, 5, 21, 26, 43, 45, 78*, 80*, 82, 94, 103, 105, 117*
Drying 45, 51, 52, 53*, 62, 66*, 80*, 94* 115
DUCT, Electric.....37, 70*, 80*
Ventilating 12*, 32
Dust Collecting....7, 9, 14, 23, 51*, 55, 60, 62, 65, 82, 99, 105*

ELECTRICAL PRODUCTS....29, 80*, 113
Electricity 21*
Electronic Products.....32*, 75*, 80*
Elevators.....25, 28, 30*, 31, 34*, 76, 82, 100, 108, 110
Engineering 22*
Engines 41*
Engraving 77
Exterminating 31
Extinguishing.....2, 15, 23, 29*
Extracting.....29, 50, 93*

FABRICATING 44, 112
Fabrics 44
Fans and Blowers 9, 27*, 51, 64, 69, 120
Fastening Tools.....62, 64
Fastenings....1*, 9, 12, 20, 32, 42, 45*, 46, 50, 51, 57, 69*, 75, 76*, 79, 80*, 80, 84, 90*, 90, 91, 97*, 99, 103, 104, 107*, 110, 113, 115, 117
Faucet Repair Parts.....12
Feeding.....11*, 46, 48, 52, 58, 65, 78, 93, 105
Fence.....19, 52
Filing 40, 88
Filling 35*, 77*
FILTERING, Air.....4, 37, 51, 65, 82, 115*
Liquid.....13*, 23*, 33*, 47*, 80*, 85, 91*, 105, 108
First Aid 80*
Flexible Shaft Equipment.....52*
Floats 89
Flock 9
Floors.....42*, 48, 53, 57, 59, 67, 72, 74, 80*, 85, 95, 102, 117, 118, 119, 120

Reader Service Form....16, 104
Useful Information.....20
New Literature.....78
Ideas For You.....60
Index to Advertisers.....118
"I Wish I Had".....120

Forgings 10, 63
Furnaces.....20, 40*, 52
Furniture.....21, 58, 72, 73*, 92*, 104, 110, 115
Fuses.....8, 17, 74*

GAGES
Dimensional....10*, 19*, 30, 36, 44*, 66, 68*, 75, 86*, 88, 98, 104*, 107, 113*, 115
Level 34*
Pressure 61
Tension 26, 80*
Gaskets.....55, 81, 107
Gear Cutting.....29
Gears.....63, 75, 76, 88, 89
GENERATORS, Electric.....54*, 83
Gas 14*
Steam.....34, 40*, 71
Glass 38, 91
Gloves.....15, 58, 97
Goggles 14, 103
Governors 74
Grabs 51*, 57
Grating, Floor.....48, 57, 72, 85
GRINDING
Belts 41, 81*
Machines 13*, 24, 46*, 52*, 62, 78, 81*
Tools.....6, 88, 120
Wheels.....46, 56, 64, 110, 117

HAMMERS....5, 16*, 49, 105, 109*
Handles.....15*, 56, 76
Handling 8*, 11, 16, 18*, 19, 30, 45, 48, 51*, 52, 54, 57, 61, 66*, 70, 78, 81*, 87*, 90, 103, 109
Handwheels 56
Hardboard 86, 114
Hard Facing 95*
Heads, Drill.....14*, 103, 116
Heat Treating.....52
HEATING
Elements.....5, 11, 21, 30, 33, 52, 55, 64, 81*, 98
Flame 19*, 92
Furnace 40*
Liquid 10, 55
Oven 110
Process.....66*, 81*, 97*
Space 47, 55*, 62*, 81*, 95, 109, 116
Helmets.....14, 44*, 77
HOISTS.....27, 33, 77, 91
Drives 50
Honing 114
Hoppers 61, 70
HOSE.....32, 34, 73, 81
Fittings 13, 44
Metal 47, 78

INCINERATORS 53*
Indexing.....67*, 75*, 108*
Ink.....17, 94*, 107
Inserts, Thread 75
INSULATING, Electric.....34, 38
Thermal 66, 81
Isolating, Vibration.....12, 47, 86

JACKS.....2, 8, 13, 29*, 35, 81
Joints, Pipe.....10, 60, 70

KEYSEATING 28

(Continued Over)

FOR ROUTING to others in your plant interested in product information

- ☐ *Plant Operating, Mr.* .....
- ☐ *Production, Mr.* .....
- ☐ *Engineering, Mr.* .....
- ☐ *Product Design, Mr.* .....
- ☐ *Purchasing, Mr.* .....
- ☐ .....

LABELS 16, 106*, 118
Ladders....28, 75, 101, 109*
Laminates 47
Lamps 29, 96*
Lapping 10
Latches 32, 104
LATHES....6*, 39, 87
Attachments 49*
Layout....47*, 56, 81*, 111
Lighting 29, 32, 64*, 84, 96*, 117
Lights, Indicating....86
Loading 87*
Lockers 21
Locknuts....69*, 84, 117
Lockwashers 79
LUBRICATING Equipment 24, 27*, 37, 51, 81*, 103, 106
Materials....3, 4, 14, 81*, 97

MACHINE PARTS....33, 82*
Machining 68*, 82*
Magnets....9, 42, 75, 86, 120
Magnifying 45
Management 88*
Mandrels, Expanding 7
MARKING Equipment..10, 24, 38, 54*, 56*, 77, 101, 107, 114
Materials....16, 17, 41*, 63*, 86, 94*, 106*, 107, 118
Masks 24*
Mats, Floor 102
Melting....16, 20, 30, 38*
METALS
Data 3
Design Strengthened....112
Expanded 64
Parts....70, 73, 92
Perforated 70, 82*
Powders 46
Prefinished 92
Rings 48
Thermostatic 35
Metal Treating....37, 72
METERS
Air Velocity 90
Electric....31*, 49*, 92, 105
Flow 82*
Liquid 97
pH 82*
Microfilm Equipment 41
Milling 44, 111*
Mixing....41, 82*, 109*
Models, Industrial 111
Molybdenum 4
Monorail 6
MOTORS
Bases 61*
Control....82, 103*, 110*
Electric 6, 9*, 13*, 16, 23*, 26, 33*, 43*, 43, 51, 60, 65*, 94, 115*
Pneumatic 69
Mowing....25, 39, 76, 105*
Mufflers 77*

NAILS 9, 57
Nameplates 68
New Products 1*
Nibbling 36*
Notching 12
Nozzles....23, 24, 39, 119
Numbering 63, 114
Nuts....50, 51, 79, 91, 103, 107*

OSCILLOSCOPES 74
Ovens....55, 62, 97*, 110

PACKAGING
Containers....39, 61*, 71
Equipment 17*, 31*, 35*, 77*, 102
Materials 39*, 57, 76*, 94, 109*, 112, 116
Packings 108
PAINTING Equipment....22*, 55, 57, 115
Materials 19*, 29*, 56, 62*, 102*
Pallets 66*
Pencils 3
Pins 20, 80
PIPE....15*, 38, 82*, 86*, 89
Coils 21, 33
Fittings 10, 32, 38, 60, 70, 82*, 105*, 118
Fittings, Jacketed....83
PLASTICS
Fabricating 38*, 98
Materials 5*, 6*, 17*, 22*, 28, 47, 59*, 61*, 82*, 89*, 112, 115*
Products..15*, 82*, 86*, 89, 113
PLATES, Floor....53, 59
Surface....47*, 56, 111
Plating....25, 74, 82*
Plywood, Metal Faced 98
Polishing 16, 41, 46
PRESSES
Attachments....48, 52, 58, 65, 85
Hydraulic 24*, 29*, 49, 106, 108*
Impact 82*
Mechanical 22*, 27, 34, 56*, 73*, 83*, 100
Pneumatic 57*
Repair 82*
Tools 40*, 78
Printing....69, 98, 101, 104
Processing 83*
Projecting 89
Protecting 14, 15, 17, 24*, 27, 32*, 44*, 54*, 58, 61*, 64, 66, 77*, 77, 83, 97*, 97, 103, 107*
Pulleys 71, 111
Pulling....7, 8, 29, 35
Pulverizing 18, 28
PUMPS
Centrifugal 17, 18, 24*, 24, 47, 72, 81, 83*, 84
Coolant 18
Hydraulic 87
Metering 61
Pneumatic....26, 54, 102
Reciprocating 24*, 78
Rotary....18, 30*, 93, 103*, 118
Turbine 83*
Vacuum 20, 30*
Punching 78
Pyrometers 80, 83*

RACKS....21, 99*, 115, 116*
Rail Clamps 3
Record Keeping....12*, 38, 41, 83*
Recorders, Production 19
Rectifying 82, 88*
Reducers, Speed....54, 63, 74, 84*
Reeling....40*, 41, 54, 65
Reels 8
Refractories 63, 73
Refrigerating....71*, 74*, 83*
REGISTER, MANUFACTURERS' 50*
Relays....2*, 11, 25*, 86, 109, 113
Resistors 29, 60*
Respirators 17, 27
Retrieving 8, 41
RINGS, Piston 83*
Retaining 97*, 99
Riveting 12
Rivets....12, 42, 51, 57, 90*, 103
Rock Drilling 53
Rolling 83*
Roofs 24*, 90
Rubber Products....15, 72, 83*

SAFETY 26*
Sanding....29, 30, 120
SAWING
Blades 92*
Machines 1*, 7*, 34, 43, 54, 64, 74*
Scaffolds 17, 22, 25, 59, 71*, 95*, 114
Scales 48, 106
Screening 66
Screw Driving....44, 47*
Screw Machine Parts....83*
Screws 20, 46, 51, 57, 90, 91, 103, 110, 115
SEALING
Components....16*, 20, 45*, 56, 63*, 65, 83*, 107, 111
Materials 19, 26*, 55, 90, 93, 108*
Service 98
Selling 50*
Separating....3, 4, 34, 58, 66, 67, 68, 96*, 102, 120
Sewing 83*, 102
Shafts, Flexible....53, 84*
SHEARING 10, 12, 47, 91, 92
Sheaves 26, 103
Shelving....76, 85, 114
Shields, Face....14
Shipping 26*
Shovels, Power....18*
Shredding 18
Signaling....60*, 84*, 86, 93, 98, 99*, 101*, 106, 113
Signs 8, 80
Silicones 20
Skids....16, 61, 78, 109
Slings....39, 67, 85*, 119
Slitting....10, 91, 92
Snow Plows 39
Soldering....2*, 10*, 65, 120
SOLENOIDS 5, 49, 107*
Solvents, Rust 61
Spraying....16, 23, 24, 39, 57, 119
Springs 42
Sprockets....7, 28, 84*
Stampings 70, 84*
Stapling....28*, 43, 84*, 89*, 97, 99
Starters, Fluorescent 32
Steel Plate Shapes....92
Steels 6, 19, 26*, 27, 30, 69, 87, 115
Stools 58, 104
STORING 4, 10*, 13, 15, 21, 56, 76, 77, 84*, 85, 91*, 95, 99*, 101, 114, 116*
Strapping....37, 40, 57, 83
Stripping 49
Stud Driving....62, 64
Surplus 4
Sweeping 36, 54
Switches 12, 18, 44, 65, 75, 84*, 86, 96, 101*, 101, 108*, 116

TABLES 110
Machine 31
Tachometers 9
Tackers 97, 99
Tanks....11, 13, 56
Tapes 1*, 38, 41*, 44, 57, 63*, 86, 116
Tapping Tools 104*
Telescopes, Industrial 32
TESTING
Abrasion 82
Electric....15, 69*, 98*, 105
Electronic 58*, 74
Gasoline 36
Metal 84*
Performance 20, 22, 25*, 34*, 112*
Stiffness 82
Surface Roughness 66
Tension 57*
Viscosity 67*
Vision 113
Thermistors 70*
Thermocouples 42
Thermometers 61, 72*, 84*, 88, 106
Thermostats 37, 50
THREADING Machines....31, 32, 46, 66, 84*, 108*
Tools 104*
Timing....25*, 25, 52*, 63, 65, 70*, 84*, 109, 113, 114
Tin 28*
Tires....1*, 93, 99, 100
Titanium 48, 85*
Tools, Hand 10
Torches 19*, 92
Track 12
TRACTORS 23, 25, 39, 45, 54, 101*
Attachments 48*
Trailers....8, 17*, 36, 42*, 61
Tramrail 89
Transfers, Decal 68
Transformers....5, 15, 33, 85*, 91
Traps....4, 7, 14, 85*, 100*
TRUCKS
Attachments 43*, 94*
Hand 16, 32*, 37, 66*, 71*, 78, 96*, 102
Hand Lift....71, 72, 75, 90, 108
Power 29*, 46*
Power Lift....13, 25, 39, 40, 60, 77, 85*, 88, 89*, 92*, 102*, 112*
Power Units 83
Tractor..23, 25, 39, 45, 54, 101*
Trailer....8, 17*, 36*, 42*, 61
TUBES....55, 85*, 116
Fittings 83, 108
Flexible....47, 73, 78
Tumbling....3*, 41, 87, 117*

UNIONS, PIPE....32, 118

VALVES
Blowoff 85*
Jacketed 83
Line....4, 28, 38, 43*, 58, 59*, 76, 80, 85*, 89, 117
Operating....9*, 31, 36, 41, 48*, 64, 81, 85*, 85, 106* 119
Operators 36
Power Operated....32, 36, 43, 53
Radiator 61
Regulating....26, 35, 59, 68, 85*, 95*, 101, 102*, 109, 112
Relief....7, 114*, 117
Repair Parts 12
Vent 96*
Ventilating....32, 51, 64, 120
Vibrating 11*, 22
Vises....16, 22, 85*, 95, 113*

WADDING 94
Washers 45*, 91
Wash Rooms....27*, 52, 68
Watchclocks 79
Water Proofing 85*
Water Treating....53, 85*
Waxes 104
Ways, Machine 33
Weighing 48, 106
WELDING
Arc....6, 28*, 41*, 62, 88*, 105*
Controls 75*
Flame 28*, 79
Materials 28*, 33, 37*, 52, 94, 95*
Wheels....1*, 7*, 30, 33*, 88, 99
Winding 28*, 92
Wire Cloth....24, 81
WIRE ROPE Fittings....50, 59, 110*
Slings....39, 85*, 119
Wood Working....1*, 15*, 43, 74*
Wrenches....35, 44, 94, 116

Address:
INDUSTRIAL EQUIPMENT NEWS
Thomas Publishing Company
A. J. GRANICK, Reader Service Manager
461 Eighth Avenue, New York 1, N. Y.

If you write maker identify as **IEN - 6158**

SOLDERING . . Ultrasonic equipment for production soldering without flux

Source: AEROPROJECTS INCORPORATED
323 S. Matlack St., Dept. IEN, West Chester, Pa.

Built to order

Sonobond trade names new ultrasonic equipment that is combined with an electrically heated platen and a soldering head to join work parts made of aluminum, copper, magnesium, silver. A range of cadmium, lead, tin, zinc solders can be used. The company has set up a soldering shop as a part of its manufacturing plant where experimental or production orders, involving one to 10,000 parts, can be put through. Manufacturers, interested in the new equipment, can check its usefulness on a production basis prior to purchase of the equipment.

Operation is on 110-volt 60-cycle ac. with input at 100 watts to a tip heater mounted in an arm supported head and at 1,350 watts to a rectangular heating platen and at 280 watts to the ultrasonic generator while the soldering operation is in progress. The platen can be brought up to 800 deg. F. Special types of ultrasonic heads can be supplied for given purposes. Complete automatic setups can be designed and built to order.

Work parts, to be soldered, are placed on the heating platen and solder is melted on the surfaces that require tinning. No flux is employed. When the solder has melted, ultrasonic energy is applied by moving the soldering head over the surface, keeping the heated tip in the head in contact with the solder. The interval of exposure to the high frequency is 5 to 10 seconds.

Then the parts are assembled in normal manner, while the solder remains molten, after which they are allowed to cool and the joint to solidifiy. No cleaning operation is required since there is no excess solder or solder residue.

If you write maker identify as **IEN - 6159**

RELAY . . Sensitive design, power amplification factor of 500,000

Source: THOMAS A. EDISON INCORPORATED
51 Lakeside Ave., Dept. IEN, West Orange, N. J.

Nine watt contacts

Model 219 is a new relay that will operate on input power of 25 microwatts, in standard design, and down to 1 microwatt in special cases. It can be employed direct with photocell and thermocouple outputs and can be used in plate and grid circuits. It can be employed in the place of a vacuum tube amplifier under certain conditions.

In effect it is a current sensitive instrument operating on the same principle as a tangent galvanometer. The assembly is available with a plug-in, solder-hook or printed-circuit base. Housing diameter is a little over 1 inch.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6160**

. . . the remote controlled "Lo-Hite" Hydraulic Jack with detached independent pump (note fig. 1 above) is a natural because the ram, only 4½ inches high (note fig. 2) fits in places where a jack handle cannot be used. Connected by 8 feet of strong rubber hose, it can safely and quickly move 30 tons, 2 inches in any direction.

Ask your local distributor for the versatile "Lo-Hite" (No. 30-H-4.5) or write the world's oldest and largest manufacturer of lifting jacks for Bulletin AD32-M and name of nearest distributor, The Duff-Norton Manufacturing Co., P. O. Box 1889, Pittsburgh 30, Pa. Canadian plant—Toronto 6, Ontario.

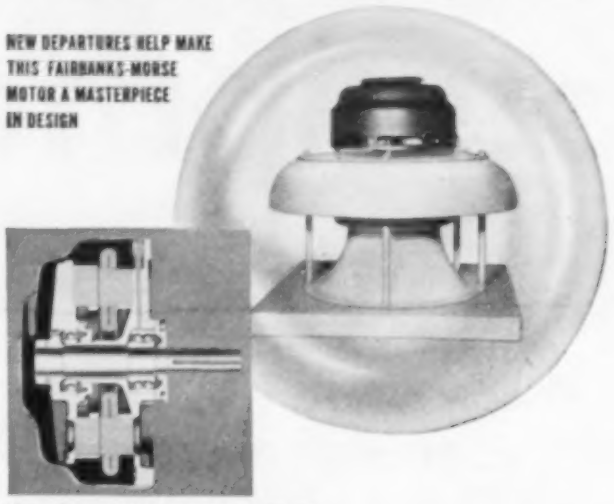
DUFF-NORTON JACKS

"Giving Industry a Lift Since 1883"

If you write maker identify as **IEN - 6161**

BALL BEARINGS BEST . . .

. . . for Space-Saving, Streamlined Designs!



New Departure's angular-contact, preloaded double-row **ball** bearing gives maximum resistance to deflection under *all* load conditions. In the Fairbanks-Morse axial air-gap motor, this bearing assures rigid, permanently accurate support for the rotor. The air gap is maintained with uniformity under *all loads and mounting positions.* Adjustments are never needed — and that means peak motor efficiency *at all times.*

NEW DEPARTURE
BALL BEARINGS

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONNECTICUT

If you write maker identify as **IEN - 6162**

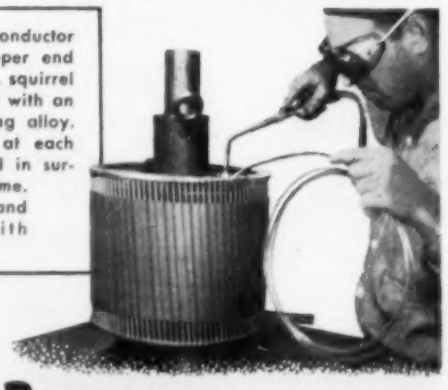
Like an evil eye, fire is constantly on the lookout for unprotected hazards such as flammable liquids, electrical equipment, materials in process. Get protection that never sleeps. Guard every hazard in your plant with a Kidde Automatic Fire Extinguishing System.

Kidde

Walter Kidde & Company, Inc.
636 Main St., Belleville, N. J.

If you write maker identify as **IEN - 6163**

Joining brass conductor bars to the copper end rings of a 20 hp. squirrel cage motor rotor with an EASY-FLO brazing alloy. The 102 joints at each end are finished in surprisingly quick time. It looks easy — and it is easy with EASY-FLO.



Sound Reasons for brazing electrical parts with *EASY-FLO*

Imperial Electric Co., Akron, Ohio, manufacturer of 1 to 200 hp. A.C. and D.C. motors, find that doing the above job with the low-temperature silver brazing alloy EASY-FLO results in a practically *indestructible rotor assembly* — and, because of the alloy's low flow point, the copper is not work-hardened and brittleness is avoided.

GET ALL THE REASONS IN BULLETIN 20

It tells why EASY-FLO brazing makes strong, ductile joints that are high in electrical conductivity and resistance to corrosion—also why its cost is surprisingly low. Write for a copy today.

HANDY & HARMAN 82 Fulton St., New York 38, N. Y.
Distributors in Principal Cities. In Canada: Handy & Harman of Canada Ltd., Toronto

If you write maker identify as IEN - 6164

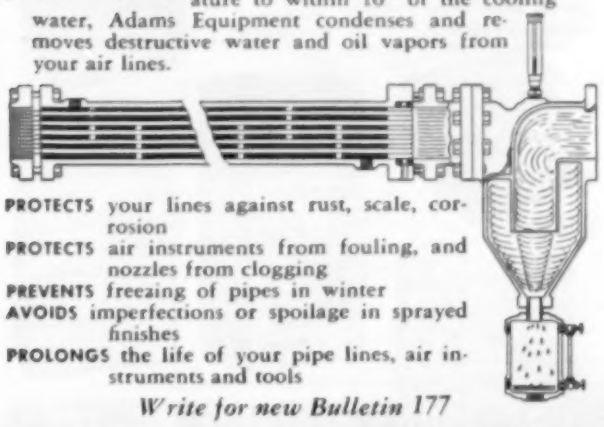
You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons

7 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator.

with **ADAMS** Aftercooler and Cyclone Separator

● Reducing compressed air temperature to within 10° of the cooling water, Adams Equipment condenses and removes destructive water and oil vapors from your air lines.



PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

Write for new Bulletin 177

R.P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

If you write maker identify as IEN - 6165

DURALL-T* TYPE UF is fully approved for underground feeder

Yes, it can be buried *directly* in the ground. Tough thermoplastic insulation and jacket resist moisture, soil acids, and crushing. *Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y.* *Reg. U. S. Pat. Off. 54441

the right cable for the job

ANACONDA® WIRE AND CABLE

If you write maker identify as IEN - 6166

Equal power with fewer belts . . .

NEW BROWNING SUPER GRIPBELTS

Oil proof . . . non-spark . . . heat-resistant

Illustration shows how 20 Browning Super Gripbelts can deliver same power as 30 standard belts, saving space and reducing sheave cost. Improved synthetic cord construction provides far greater strength and safety margin, better grip, less slip. Minimum stretch, maximum flexibility, simplified matching.

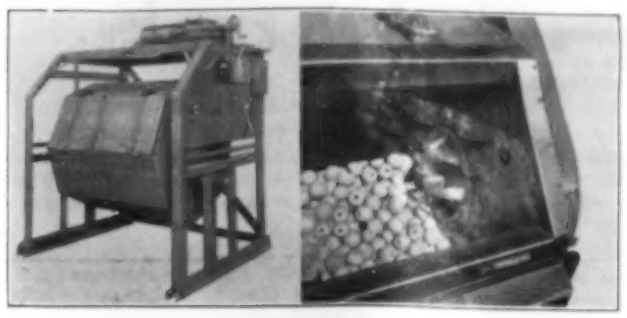
Ask your Browning distributor or write us for Bulletin 2019.

Browning MANUFACTURING COMPANY MAYSVILLE, KENTUCKY

If you write maker identify as IEN - 6167

TUMBLING . . Refrigerated barrel removes molding flash from soft rubber

Source: TUMB-L-MATIC INCORPORATED
4510 Bullard Ave., Dept. IEN, New York 70, N. Y.



Finished work thaws out

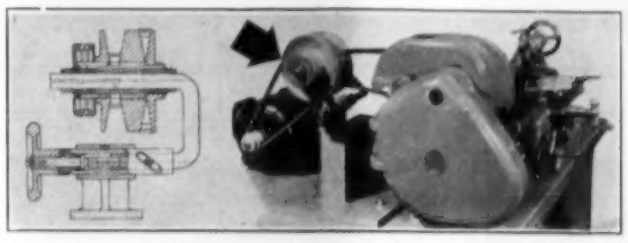
Work parts, of soft rubber, are hardened by refrigerating them in this new barrel with the aid of liquid carbon dioxide. Then the flash remaining from a molding operation can be removed by the tumbling action to leave the work parts clean and smooth. The octagonal motor driven barrel is lined with stainless steel and insulated against heat transmission. Liquid carbon dioxide is fed through controls into the barrel where it expands and absorbs heat to provide the required low temperature in a range from 0 to minus 120 deg. F.

The barrel measures 30 in. in diameter by 36 in. in length. Inside dimensions are 26 by 33 inches. Floor space measures 46 by 58 inches. Height is 65 in. and weight is 1,200 pounds. Carbon dioxide controls are supplied as part of the standard equipment. An indicating thermostat is set to maintain a desired temperature. The barrel can be supplied, without the controls, to employ dry ice as the refrigerating medium.

If you write maker identify as IEN - 6168

DRIVE . . Variable pitch sheave changes speed in V-belt transmission

Source: SPEED SELECTOR INC.
118-U Noble Court, Dept. IEN, Cleveland 13, Ohio



Specifications in Bulletin 46

Model 4100 with three maximum ratings at ¼, ½ and ¾ hp. based on a 1,750-rpm. motor and Model 6100 with three ratings, maximum at ¾, 1 and 1½ hp., are new assemblies of compound spring backed V-belt sheave mounting bracket and adjusting handwheel. The assembly applies between a motor and a driven machine so the motor drives one side of the compound sheave and the other side connects to the machine by means of a second V-belt. Turning the adjusting wheel in the bracket moves the sheave assembly toward or away from the motor to decrease or increase the speed at the driven machine.

Sheave diameter is 4 in. on the small unit and 6 in. on the larger one. Maximum pitch diameter is 3.8 and 5.8 inches. Ratio is 4 to 1 and 9 to 1 respectively.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6169

SAFETY EQUIPMENT FOR ALL INDUSTRIES

M&M RAIL CLAMPS

Used for car stops, on loading platforms, temporary sidings, cars on grades and traveling cranes.

THIS The Dangerous Way — OR — **THIS** THE SAFE WAY

Used and recommended by leading Steel Companies, Manufacturing Plants, Mines, Grain Elevators, Cement Plants and Quarries.

WRITE FOR BULLETIN NO. 4

IPCO *Safety Equipment for all Industries*
INDUSTRIAL PRODUCTS COMPANY
2801 N. FOURTH STREET • PHILADELPHIA 33, PA.

If you write maker identify as IEN - 6170

LUBRICATION ECONOMY

"LUBRIPLATE LUBRICANTS Satisfy our Requirements"

Stephens-Adamson Mfg. Co., conveyor manufacturers of Aurora, Ill. write us . . . *"We do not know of a single case of bearing trouble through faulty lubrication where LUBRIPLATE has been used!"*

1. LUBRIPLATE reduces friction and wear

2. LUBRIPLATE prevents rust and corrosion

3. LUBRIPLATE is economical to use

Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

LUBRIPLATE DIVISION
Fiske Brothers Refining Co.
Newark 5, N.J.—Toledo 5, Ohio

The Different LUBRICANT!

DEALERS EVERYWHERE, consult your Classified Telephone Book

If you write maker identify as IEN - 6171

CASTELL push button LOCKTITE lead holder has PERFECT BALANCE

Perfect balance makes Push Button CASTELL LOCKTITE Holder the king of its class.

Exclusive collet holds lead in **bull dog grip,** preventing slipping or turning.

No graphite dust stains your fingers —because with one-hand push-button action you extend and retract the lead. *No need to touch graphite.* Comfortable "wood-pencil" feel—not metallic.

Equipped with easily-replaced clutch, giving your LOCKTITE indefinite life.

Imported CASTELL 9030 Lead inserted in your LOCKTITE Holder gives you the combination for brilliant results on your drawing board. Ask your Dealer for both — LOCKTITE Holder and Imported CASTELL 9030 Lead in 19 degrees, 7B to 10H.

AW FABER-CASTELL PENCIL COMPANY, INC., NEWARK 3, N. J.

If you write maker identify as IEN - 6172

The Metals Handbook

1332 Large pages
1752 Illustrations
1057 Tables
803 Articles
1,620,000 Words
40,000 Copies in use

Here is a book without a competitor . . . a book 25 years in the making. The current, 7th edition of the Metals Handbook was compiled and written by 68 committees of the American Society for Metals; more than 500 metals engineers were hand picked by the Society as the top experts, the men best qualified to write the most authoritative possible reference book on metals, metal properties, fabrication and uses. The book they wrote is the Metals Handbook. It is divided into 37 principal sections, and contains 803 separate articles and data sheets on metals, metal shaping, forming, heat treating, welding, machining, foundry work, cleaning, finishing, testing, inspection, control and research techniques. All metals, all processes are included. The 64-page index and 4-page section on how to use the book make it easy for any reader to find what he wants. Over 40,000 copies of this edition are now in use by engineers, production men, executives, purchasing agents and others. Order your copy today by returning the coupon below. Price is $15.00.

American Society for Metals, Room 711
7339 Euclid Ave., Cleveland 3, Ohio

Rush me a copy of the Metals Handbook.

Name .....
Company .....
Address .....
City ..... Zone ..... State .....

☐ $15.00 enclosed ☐ Bill me

If you write maker identify as IEN - 6173

154 ideas on ways to use...

154 varied applications of molybdenum sulfide in the shop and in the field are described in a new booklet now available. This solid-film lubricant has demonstrated unique anti-friction properties under conditions of extreme pressure, high velocity, elevated temperature, or chemical attack.

The 40-page booklet contains the records of solved lubrication problems—some might solve your own. Write now on your business letterhead for this booklet.

Moly-sulfide
A LITTLE DOES A LOT

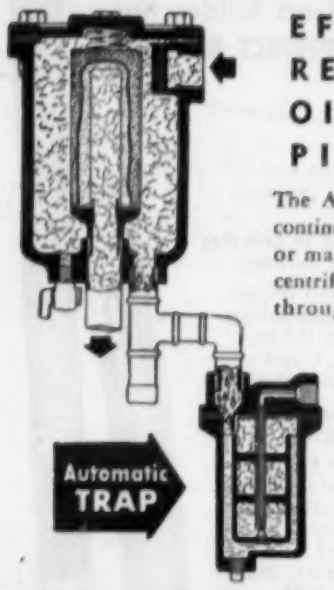
The lubricant for extreme conditions

MS-6A

Climax Molybdenum Company
500 Fifth Avenue, New York City 36, N.Y.

If you write maker identify as IEN - 6174

Poro-Stone Filtration
FOR COMPRESSED AIR



EFFICIENTLY REMOVES OIL, WATER PIPE SCALE

The Adams *Poro-Stone Filter gives* continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operations.

Write for complete data Bulletin 177

R. P. ADAMS CO., Inc.
219 E. Park Drive • Buffalo 17, N. Y.

ADAMS *Poro-Stone* AIR FILTER

If you write maker identify as IEN - 6175

A NEW DISC...A "NEW" VALVE

Crane No. 7 Brass Valves with Quick-Change Composition Disc

Save time, trouble, and money by standardizing on Crane Composition Disc 150-Pound Globes, Angles and Checks. Simple to service . . . no need for big inventory of repair parts. When a leak shows up, make a "new" valve—simply by replacing the disc holder assembly.

The composition disc takes most of the normal wear—stands up well under ordinary usage—seats easily even on air and gas—absorbs foreign particles that might cause leakage in metal disc valves. Rugged construction throughout. Sizes ⅜ to 3-inch. For steam, hot and cold water, air, oil, gas, gasoline, and many other fluids.

CRANE VALVES

CRANE CO., *General Offices:* 836 S. Michigan Ave., Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

Industrial Equipment News IEN

PUBLISHED BY THOMAS PUBLISHING COMPANY

W. E. Irish — Editor and Vice-President
F. Morse Smith — Vice-President in Charge
J. W. MOSS — Managing Editor
E. M. DALLDORF — Assistant
A. J. GRANICK — Circulation Manager
R. B. COHEN — Production Manager

EDITORIAL ASSISTANTS
M. L. Welsh; A. J. Willis

CIRCULATION AND READER SERVICE ASSISTANT
R. Lisak

BUSINESS DEPARTMENT ASSISTANTS
M. Casey; R. Irish; A. Kevelson; B. Sullivan

These are our local offices:		*Telephone*
Atlanta (6)	3 Villa Dr. N. E.	VErnon 2969
Boston (8)	50 Beacon Street	LAfayette 3-4688
Chicago (4)	20 West Jackson Blvd.	HArrison 7-3730
Cleveland (14)	3145 Superior Avenue	CHerry 1-2221
Detroit	15858 Kirkshire (Birm.)	MIdwest 4-1072
Indianapolis (20)	5909 N. Guilford Avenue	BRoadway 4422
Kalamazoo (45)	426 Potter Street	Kalamazoo 4-2868
Los Angeles (57)	2700 W. 3rd Street	DUnkirk 2-4889
Minneapolis (1)	P. O. Box 455	ORchard 5-8451
New York (1)	461 Eighth Avenue	OXford 5-0500
Philadelphia	P. O. Box 96, Upper Darby	GRanite 2-6500
Pittsburgh (22)	1020 Farmers Bank Bldg.	EXpress 1-0244
Rochester (9)	388 Browncroft Apt. 5	CUlver 0346
San Francisco (11)	204 Sacramento Street	EXbrook 2-1333
Toronto (1)	137 Wellington St., W.	EMpire 4-1421

THIS ISSUE 70,500 COPIES

Printed by Charles Francis Press, New York

BPA

Industrial Equipment News acts solely in a news reporting capacity for data supplied to it on new industrial developments.

Copyright 1954 by
THOMAS PUBLISHING COMPANY
461 Eighth Ave., New York 1, N. Y.

Acceptance under Sec. 34.64 P.L.&R. authorized.

NBP

VOL. 22 JUNE, 1954 No. 6

Editing the News

The news of each new product development, sent in by a manufacturer or his agent, or by IEN's own representatives for editorial description in IEN, is scanned not only for newness but also to verify the source and actual availability of the product from that source. While this editing procedure is not so important in a publication just dispensing news, IEN believes it is essential as a part of its specialized product news reporting. IEN's editorial service is aimed solely to find and publish suggestions to solve your plant and product problems by describing products and services to meet them.

Probably it is an understatement to say you would be disappointed if, upon following through, you find the product is not actually available or that the source, named in connection with it, cannot supply you. There are three sources for this type of news release.

One is the manufacturer with only the "idea" for a new product. He wants to test your reaction before going into production. Another is the materials or product component maker who employs his own publicity department to write a release for another manufacturer who will be the actual source of the product in question. The third is the manufacturer whose publicity department assembles and sends out releases on new things for that particular manufacturer's own use.

The first type is not difficult to detect because the fact of non-existence is almost certain to appear at some point in the release. The second is a matter of obtaining publication authorization from the actual source. The third requires contact with the publicity department that sent the release to try to secure the source name so it can be followed up for a direct release.

In each of these "unregular" releases, may be news of major importance. IEN's editing job becomes one of finding the facts and the true sources and securing authorization so the news can be reported correctly for your information and action. For example—

An automotive manufacturer released news of work done in its tooling department to construct press dies, jigs, fixtures of a new plastic casting resin. Some remarkable results were outlined but the names of the resin and the resin manufacturer were omitted. Here was news of possible first line importance if IEN could find the resin source and secure an authoritative release. The automotive manufacturer was unable to supply any further facts. Perhaps it was just plain good fortune that IEN found the key right in its own yard.

In March of this year, IEN-2957, Bakelite Company advertised its Epoxy resins for metal forming dies and fixtures and, just in good time to make this June issue of IEN, it released editorial information on additional new developments in its Epoxy C-8 line. You will see IEN's description on page 5 in IEN-6182. The resins are new. They are actually available from Bakelite along with excellent technical assistance that this company will give you. If it is the completed job you want and not the resins, Bakelite will name several sources.

W. E. Irish.

If you write maker identify as IEN - 6176

750 DIFFERENT CABINET COMBINATIONS

Available for Small Parts Storage, Handling or Display. A Type and Size for Every Need.

We can supply you the perfect cabinet for your particular requirements. 750 different combinations can be CUSTOM - BUILT at production line prices. Free catalog upon request.

AKRO-MILS, INC. Box 989-N AKRON 9, OHIO

If you write maker identify as IEN - 6177

YOU NEED THE LOW-COST MEAD *Air-Clamp**

*Air Cylinder

—SO DURABLE
—SO SIMPLE

—SO EFFECTIVE
—SO EASY TO USE

EXCLUSIVE MEAD DESIGN ASSURES TROUBLE-FREE OPERATION

1" to 6" bore, ½" to 8" stroke. 4 mountings.

Mead invented, patented and introduced the original Air-Clamp* to the air cylinder field—with its simple design, compact power and long, dependable performance. Thousands of progressive factories use Air-Clamp*. Save countless hours of production time in clamping, locking, releasing, feeding, and in simplified design of work-holding fixtures. Every engineer, production man and purchasing agent is invited to send for the new Mead Catalog.

PROMPT DELIVERY from local or factory stocks of Mead single-acting and double-acting Air Cylinders.

NEW MEAD INDUSTRIAL AIR POWER CATALOG READY! Illustrates, describes the complete line of MEAD-DESIGNED AIR Operated Devices such as Air Cylinders, Valves, Presses, Vises, Chucks, Hammers, Drill Press Feeds, Work Feeders, Timers, semi-automatic combinations, etc.

MEAD SPECIALTIES COMPANY WRITE FOR NEW CATALOG!

4114 No. Knox Ave., Dept. EA-63, CHICAGO 41, ILLINOIS

If you write maker identify as IEN - 6178

SAVE UP TO 85% ON GOVERNMENT SURPLUS

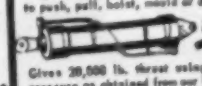
MAGNI-FOCUSER

Has fine ground lenses of optical glass. Neutralizes eye strain from close work. Binocular design gives third dimensional vision. Allows freedom of both hands. Wear over glasses. Plastic frame with adjustable headband.

SIZES: 20" focal lgth. 1½ power—14" focal lgth., 1¾ power; 18" focal lgth., 2¼ power; 8" focal lgth., 2½ power . . . . . price each ONLY 10.50

HYDRAULIC EQUIPMENT

We stock over 100,000 Hydraulic Cylinders in 106 different types and sizes. These can be adapted wherever tremendous power is needed to push, pull, hoist, mould or drive, etc.



SPECIAL

Gives 20,000 lb. thrust using 1000 PSI line pressure as obtained from our hydraulic pumps. Will produce up to 40,000 lb. thrust with 2000 PSI. Can also be used on a low pressure air system. Has 4" bore; 18" stroke; 30½" long. Ideal for shop.

Part No. 70 NEW 43.95

OTC TOOLS

See our complete line. Pullers for Gears, Bearings, Wheels, Pulleys, Bushings, Shafts, etc.

NEW 10 TON HYDRAULIC PRESS

Use this Press in the Shop or take it with you on the job. Frame is 4" welded channel iron. Has 4½" stroke, 2½" diam. ram. Valve operates piston in both directions. Adjustable platform. Positive power Hand Pump with handle. 2000 PSI pressure gauge. 129.00

HYDRAULIC HAND PUMP

Operating pressure 1500 PSI. Cap., 1.5 cu. in per complete cycle . . . 12.75

HYDRAULIC ACCUMULATORS

A-2B FLOATING PISTON TYPE – 4" x 18" Built to stand 2,000 PSI 12.75

A-5 VICKERS – 10" dia. Ball type. Built to stand 2000 P.S.I. 24.50

NOTE: Stocks include bargains in Hydraulic Pumps – Valves – Motors – Boosters – as well as Oil, Water and Fuel Pumps, etc.

WORLD'S MOST AMAZING BARGAIN CATALOG

320 PAGE-1954 EDITION

Packed with SENSATIONAL VALUES in GOV'T SURPLUS – FACTORY CLOSE-OUTS – and GENERAL MERCHANDISE. Fully priced and illustrated. Thousands of items in Machine and Industrial Tools – Hydraulic Equipment such as Cylinders, Pumps, Valves, Motors, Fittings, etc. Bargains in Electric Motors, Generators, Blowers, Parts, etc. Also Hand and Power tools, Precision Instruments, Bearings, Hose Clamps, Winches, Foam Rubber, Microscopes, etc. ALL AT PALLEY BARGAIN PRICES – PRICED TO SELL!

Palley SUPPLY CO. 2263 E. Vernon Ave. Dept. IN-6 LOS ANGELES 58, CALIF.

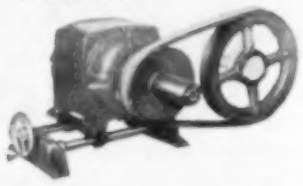
Pay by M.O. or check. P.O.'s accepted from D&B firms. No deposit with C.O.D.'s. Prices FOB Los Angeles

If you write maker identify as **IEN - 6179**

increase machine performance with

LOVEJOY

Variable Speed PULLEYS



Quickly, easily installed on old or new machines . . . allowing infinitely variable speed adjustments over wide range. A mere turn of hand instantly, accurately speeds up or slows down the driven unit for *changes in production schedules . . . adjustment for operator ability . . . corrections for size or stock, temperature or humidity, size or density.*

Available in 8 sizes—fractional to 10 hp. with ratios to 3 to 1.

Write today for illustrated catalog and complete technical data.

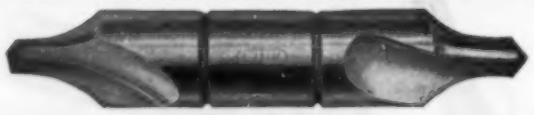
LOVEJOY FLEXIBLE COUPLING CO.

4814 W. LAKE STREET • CHICAGO 44, ILLINOIS

ALSO MFRS. OF UNIVERSAL JOINTS AND FLEXIBLE COUPLINGS

If you write maker identify as **IEN - 6180**

FAR LESS TIP BREAKAGE with "RING SEAT" CENTER DRILLS



USE "RING SEAT"

CENTER DRILLS

IF YOU GRIND BETWEEN CENTERS

The "R" type, curved contour Ring Seat center drills give you a stable, accurate, precision center, quickly restored after heat-treat.

Ring Seat center drills produce a protected center at no extra cost—and carry a built-in discount because they last longer.

Lapping After Heat Treat

is a simple quick operation since only about one-third the usual area needs clean-up. Lapping with a rotating felt wick removes heat scale and restores a perfect center — at the original place.

• A PREMIUM DRILL AT NO EXTRA COST •

LINK INDUSTRIES

13848 Elmira Detroit 27, Mich.

FREE CIRCULAR

If you write maker identify as **IEN - 6181**

Amazing

FLASH BOX OPENER

Opens Any Carton Quicker . . . Cleaner

Exclusive patented blade holder adjustable to varying thicknesses of carton covers.

THE ONLY CARTON OPENER THAT GIVES YOU ALL THESE ADVANTAGES:

Penetrates exactly under the outer cover thickness • Protects contents of carton • Cuts clearly to permit re-use • Prevents accidents • Saves time • Eliminates fatigue. *Already accepted by leading industries.*

Retail Price **$1.75**

FLASH BOX OPENER CO., Inc.

52 W. Houston St. • New York 12, N. Y.

If you write maker identify as **IEN - 6182**

PLASTIC . . Epoxy casting resins to make dies, fixtures, jigs, patterns

Source: BAKELITE COMPANY
30 E. 42nd St., Dept. IEN, New York 17, N. Y.

Technical data upon request

Dies to form metal, accurate checking fixtures, frames, jigs, models, foundry patterns and match plates for green sand foundry molds, can be cast using the new group of liquid resins and their hardeners that have been added to the company's Epoxy C-8 line. A rigidly controlled process, developed by the company, produces uniform high quality resins that cure to hard solids, following addition of the hardeners, at low or room temperatures, without applied pressure and with negligible shrinkage. Two new resins, BR-18774 and BR-18795, and four hardeners are the most recent additions to the line. The hardeners and resins can be blended for a range of curing speed, viscosity, pot life.

Electronic assemblies, that damage at high temperature, can be encapsulated in a protective envelope of the resin at room temperature. Transistors, selenium rectifiers, capacitors, interference filters can be similarly protected. The resins form a strong bond with most metals, ceramics, glass, plastics, hard rubber and so are suited for use in manufacture of cements, sealers, caulking compounds.

Accurate match plates, for green sand foundry molds, have been made of the resin-based compounds at a saving in cost and time compared to plates made of metal. The resin is employed to cast the plate and pattern integrally so no further assembly is required. A number of the plates can be cast from one plaster-of-paris mold which, in turn, is formed from a single-shrink master pattern. The plate is resistant to change due to temperature, humidity, weathering. It releases freely from the green sand and so requires no parting agent. It has high impact strength and resistance to wear and abrasion.

If you write maker identify as **IEN - 6183**

PLASTIC . . Laminated sheet to make electrical equipment parts

Source: NATIONAL VULCANIZED FIBRE CO.
Maryland & Beach, Dept. IEN, Wilmington 99, Del.

A representative part is shown

Phenolite Grade Y-2401 is a new paper base plastic sheet bonded with a polyester melamine resin. It is available in sheets measuring to 39 by 47 in. and in 1/32 to 1-in. thicknesses. Color is ivory. Finish is dull semi-gloss. The sheet is particularly suited for parts used in construction of transformers, circuit breakers, switch bases, supports for sliding contacts, and for television and radar insulation.

Characteristics are excellent dielectric strength, low dissipation factor, good moisture resistance and arc resistance. The material can be shaped by means of shaving dies as shown in the illustration. It can be drilled, sawed, turned, milled, employing standard tools. It can be rough blanked, close to final form, and punched in thickness to 1/8 inch.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6184**

SOLENOIDS

A-128 solenoid; 18 lbs. at 85% voltage; 3" stroke.

AS-427 solenoid; 14 lbs. at 85% voltage; 2.5" stroke; 600 strokes per minute.

A-100 line of pure D.C. solenoids without cut-out switch; ranging from 1.5 lbs. to 100 lbs.

AS-400 line of high speed solenoids; ranging from 1.5 lbs. to 14.0 lbs. Speed up to 600 strokes per minute.

We recommend that you get acquainted with these two lines of solenoids. They can do things for you that you never thought could be done.

We make 44 other standard lines of solenoids. Also solenoid brakes up to 24,000 ft-lbs. torque capacity.

See our catalogs in Sweet's Catalog Service. Ask for more information.

TROMBETTA SOLENOID CORP.

329 N. MILWAUKEE STREET • MILWAUKEE 2, WISCONSIN

If you write maker identify as **IEN - 6185**

HEAT FAST
HEAT CONTROLLED
HEAT EASY-TO-INSTALL
HEAT ECONOMICAL

Need heat for production or processing? Chromalox Electric Heaters are your quick and economical answer. Over 15,000 types, sizes and ratings to choose from to give working temperatures up to 1100°F. Temperatures controlled precisely by either manual or automatic thermostatic controls. No steam-lines, no boilers or expensive equipment to install!

WRITE FOR

Handbook "101 Ways to Apply Electric Heat." It suggests many applications for Chromalox Electric Heaters.

19-97

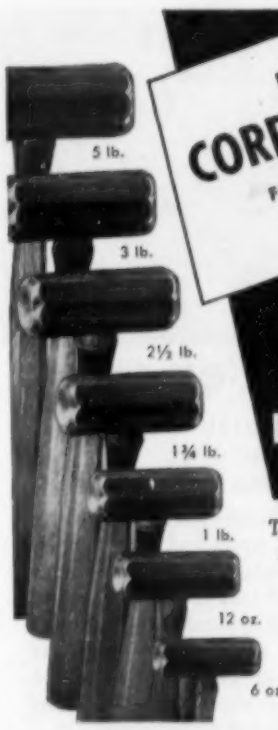
Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.

See Chromalox Cartridge Heaters Advertisement, Page 11

CHROMALOX

ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as **IEN - 6186**



PICK THE **CORRECT HAMMER** FOR EVERY STEEL STAMP, CHISEL, STAR DRILL, OR SLEDGING APPLICATION

Mecco **SAFETY ENGINEERS' HAMMERS**

"STYLE OE"

To minimize spalling and mushrooming, "Style OE" Hammers are machined of Mecco Safety Steel, carefully heat treated in sizes to meet your needs. Available in the right weight for every application.

Write for complete data

Mecco SAFETY MARKING TOOLS **M.E.CUNNINGHAM CO.**

1039 CHATEAU STREET, PITTSBURGH 33, PA.

If you write maker identify as **IEN - 6187**

FAST Installation

Allis-Chalmers dry-type transformers can be installed fast because there is plenty of room to make connections. On single-phase units 10 kva and below (shown above) and three-phase units 15 kva and below, a removable plate at the bottom front of the case makes it easy to connect system cables.

On larger size units you can remove the top cover for equally fast access to connections. All sizes are light in weight, take little space. Mount them anywhere — no vaults are needed.

Get more information from your nearby A-C authorized distributor or district office. Or write Allis-Chalmers, Milwaukee 1, Wisconsin, for Bulletin 61B6382A.

A-4232

ALLIS-CHALMERS

If you write maker identify as IEN - 6188

PACKING **from** CONVEYOR ...**to** CONVEYOR SAVES HANDLING

Stock arrives on bench-high line. Empty trays return on center line. Filled cartons move to banding, weighing and shipping without leaving conveyor.

METZGAR EQUIPMENT—PLUS METZGAR EXPERIENCE

- GRAVITY-WHEEL, ROLLER
- LIVE ROLLER
- POWER BELT—HORIZONTAL
- FLOOR-TO-FLOOR
- NYLO ROLL
- SWITCHES, CURVES

. . . gives you highest conveyor efficiency and steps up production tempo. Ask for suggestions. No obligation.

METZGAR CONVEYOR CO.

417 Douglas, N. W.

MFRS. OF WHEEL & ROLLER GRAVITY & LIVE ROLLER CONVEYORS • POWER BELT CONVEYORS • SWITCHES • ACCESSORIES & REEL DOLLIES

GRAND RAPIDS 4, MICH.

If you write maker identify as IEN - 6189

Use MONORAIL CRANES

- WHERE SPACE IS LIMITED
- TO HANDLE VARIABLE JOBS
- FOR LOW MAINTENANCE COSTS

These are just a few reasons why American MonoRail Cranes are being installed in an ever-increasing number of plants. Your American MonoRail representative will tell you more about MonoRail Cranes—ease of handling—smooth travel—strength—safety interlocks—power operation and *interlocking carrier service between and beyond the craneways.* This information is available without obligation.

SEND FOR YOUR COPY C-1 BULLETIN

AMERICAN MONORAIL COMPANY

OVERHEAD HANDLING EQUIPMENT

13111 ATHENS AVENUE • CLEVELAND 7, OHIO

If you write maker identify as IEN - 6190

NEW SLIDE CHART

on *Carpenter* Stainless Steels

gives you information to help you select the proper Stainless for

Drawing	Machining
Forging	Riveting
Heading	Roll Forming, etc.

This new Carpenter chart also contains valuable data on the physical constants of many Stainless grades. For your copy, just return the coupon.

THE CARPENTER STEEL COMPANY
151 W. Bern St., Reading, Pa.

Please send me a copy of the new Carpenter Stainless Slide Chart.

NAME _____ TITLE _____
(Please Print)

COMPANY _____

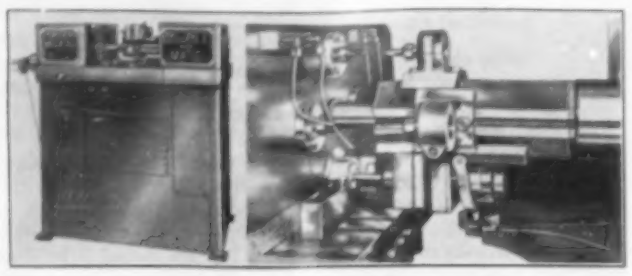
ADDRESS _____

CITY _____ ZONE _____ STATE _____

If you write maker identify as IEN - 6191

LATHE . . Automatic machine for primary and secondary operations

Source: PORTER-McLEOD MACHINE TOOL CO.
Dept. IEN, Hatfield, Mass.



Minimizes second operation work

Double-Matic trade names a new automatic machine with a four position tool holding turret that revolves on an axis parallel to the spindle through which bar stock is fed. The machine differs from other similar designs in that the final turret position mounts a live spindle containing a collet. The spindle is driven at the same speed as the main drive spindle.

It grips work that has been machined in normal manner by the tools carried on the turret while cut off is taking place. Then, while the turret tools are machining the next work piece, the back end of the initial one is machined by tools mounted on the head stock. Finally the work is ejected from the turret spindle prior to grasping the next piece as it is ready to be cut off.

The main spindle is mounted on two double row precision ball bearings. Other high speed shafts in the assembly operate on ball bearings also. Bar stock capacity is to 1 in. in diameter with length maximum at 4½ in., or more under certain conditions. Spindle speed ranges from 400 to 3,000 rpm. The driving motor rates 3 or 5 hp. and operates at 1,800 rpm. The coolant tank holds 20 gallons. Floor space without the stock feed tube measures 57 by 27 inches.

If you write maker identify as IEN - 6192

PLASTIC . . Aluminum filler for castings, dies, molds, patterns

Source: SMOOTH-ON MFG. COMPANY
572 Communipaw Ave., Dept. IEN, Jersey City 4, N. J.

Prepare, mix and apply

Metalset A-101 is a new epoxy resin compound that hardens by polymerization following the addition of a curing agent. It is particularly suited to repair castings, fill joints in sheet metal, build up surfaces of patterns, dies and molds. Application is with a spatula or other hand tool. Curing can be accelerated by heat at about 120 deg. F.

The material adheres strongly to metal, particularly aluminum. It is hard, tough and machinable down to a feather edge. It is chemically stable, can be stored indefinitely. It is non-combustible. It cures in a few hours at room temperature but can be stored indefinitely prior to addition of the curing agent which is supplied in a separate container.

Packaging is in 6-oz. cans listing at $1, 1½-lb. cans at $2.75 and 3-lb. cans for $5, each with the curing agent.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6193

KIPP *Air Grinders*

MODEL JA
50,000 R.P.M.
Weight 12 ounces; length 6⅝ inches; chuck size ⅛ inch. Wheel guard removed for better illustration.

$42 IN U.S.A.

THEY GRIND--NOT JUST RUB!

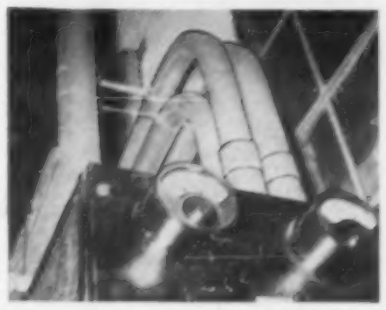
The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

MADISON-KIPP CORP.
224 Waubesa St., Madison, Wis., U.S.A.

Write for KIPP Air Tool Catalog AT 3006

If you write maker identify as IEN - 6194

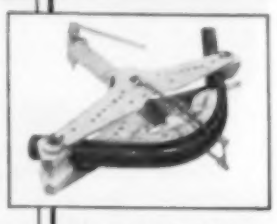


- 20 hours in time
- $64 in materials

SAVED ON ONE JOB WITH A TAL PORTABLE BENDER

by the Johnson Electric Co. Chicago

By making 12 90° bends in 3" conduit with a TAL ONE-SHOT BENDER instead of using elbows and couplings, time was cut from 59 to 39 hours . . . $134 was saved on labor and material on installation of a 250 hp, 220 volt, 3-phase air compressor in the shop of the Diamond T Motor Car Co., Chicago. This was possible only because a TAL ONE-SHOT completes bends in one setting—no shifting of pipe is necessary!



COMPLETE LINE OF BENDERS

- For pipe up to 8"
- For copper and thinwall tubing.
- 6-Way Hickeys — do what others can't do.

TAL BENDER, INC.

DEPT. 2 • MILWAUKEE 2, WISCONSIN

If you write maker identify as IEN - 6195

Lightweight HELIARC TORCH *is water-cooled...*

FOR EFFICIENT INERT GAS WELDING AT LOW COST

You can make high quality welds every time with this lightweight, 300 amp. HELIARC HW-10 torch. Both the torch body and power cable have all-internal water-cooling for cooler operation even when welding continuously at full capacity. Yet cleaning is easy for all water passages are straight. Electrode adjustment is quick and simple, too. No wrenches needed. And electrode stub loss is minimized by an improved water-cooling system. Call your nearest LINDE representative today for more details on the HELIARC HW-10 torch.

LINDE AIR PRODUCTS COMPANY
A DIVISION OF UNION CARBIDE AND CARBON CORPORATION
30 East 42nd Street UCC New York 17, N. Y.
Offices in Other Principal Cities
In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

The terms "Heliarc" and "Linde" are registered trade-marks of Union Carbide and Carbon Corporation.

If you write maker identify as IEN - 6196

Great Motors from Great Britain!

Newman Totally Enclosed Fan Cooled Squirrel Cage Motors

- world-famous NEWMAN MOTORS
- net savings up to 40%
- immediate delivery
- unconditionally guaranteed
- superior design—to N.E.M.A. standards
- offices in principal cities

For the first time, the complete world-famous line (2 million installed in 62 countries since 1935) of NEWMAN MOTORS, built to N.E.M.A. standards, is offered to the American Market in sizes up to 230 H.P.

These are new, high-quality motors equipped with the prestige of a great motor-making company. Vast savings, dependability, unconditional guarantee are offered to American buyers.

Any motor sent free and without obligation for examination and testing. Factory stocks at New York, Chicago, Savannah, Houston, Portland, San Francisco and Los Angeles.

Write for a catalog and price list to-day

Newman INDUSTRIES (AMERICA) INC.
[illegible] STREET NEW YORK 4, N.Y.

If you write maker identify as IEN - 6197

makes the Solid Arbor obsolete

CHAMPION E-X-P-A-N-D-I-N-G MANDRELS

The expanding sleeve, mounted on tapered arbor, expands automatically to fit the hole. Inserted by hand — no arbor press needed. Always an exact, positive, concentric fit. Locked by a single mallet blow. Unlocked the same way. CHAMPION Expanding Mandrels are used in machine shops around the world. Save time, cut production costs, whether the job calls for machining one piece or a thousand.

Precision Model has expansion range of .010". Available in regular sizes to fit holes from ½" to 3" diam. Holds work to tolerances of .0002" run-out. Guaranteed for precision grinding, turning and milling operations.

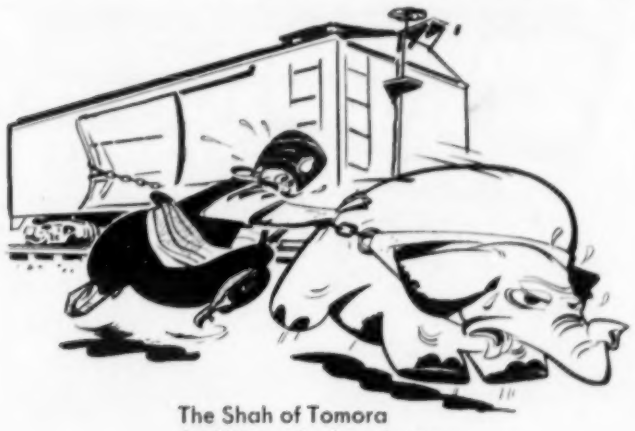
Standard Model maintains close tolerances, handles material of any length bore, hard or soft metals — from thin tubes and bushings to heavy castings and forgings. A set of fourteen will fit every hole from ½" to 9½" diam.

CHAMPION *Expanding Mandrels can be made in special shapes and sizes to fit any specifications. Quotations on request. Write for descriptive folder today.*

WESTERN TOOL & MFG. CO., INC.

Our 53rd Year • Dept. 22 • Springfield, Ohio

If you write maker identify as IEN - 6198



The Shah of Tomora
And his pachyderm Laura
Strained all their muscles
And bust all their bustles
But couldn't budge that CARDORA.

Why use primitive methods to open balky, hard-to-roll boxcar doors? Why endanger lives and limbs? Why waste labor, time and money? THE NOLAN ONE-MAN CAR DOOR OPENER OPENS ANY BOXCAR DOOR IN 20 SECONDS OR LESS!

A few quick pulls on the anchor chain by one man and the door rolls open. The NOLAN saves its low initial cost in the first hour of operation.

NOLAN-ONE-MAN CAR DOOR OPENER

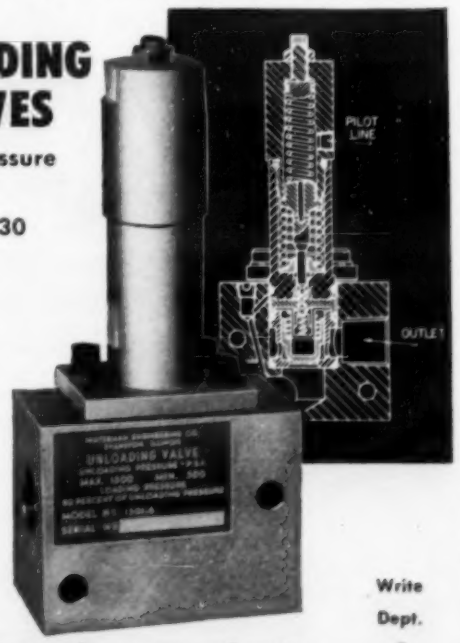
$37.50 F.O.B. Bowerston

Order one or more now! *Free literature*

THE NOLAN COMPANY 114 Pennsylvania Street, Bowerston, Ohio

If you write maker identify as IEN - 6199

UNLOADING VALVES



For system pressure to 3000 psi

Flow rates to 30 G. P. M.

Waterman Unloading Valves are fast-acting, long-lived, easily adjustable. Maintain desired pressure settings without continuous readjustment.

Hardened and ground poppets and seats eliminate leakage.

Large internal passages assure maximum flow with a minimum pressure loss.

No external drain lines required.

Write Dept. C for Circular

Waterman Engineering Company
725 CUSTER AVENUE • EVANSTON, ILLINOIS

If you write maker identify as IEN - 6200

WHEELS . . Resilient hub assembly for use on trailer wheels and casters

Source: **BASSICK COMPANY**
439 Howard Ave., Dept. IEN, Bridgeport 2, Conn.

Catalog FH-53

The company announces further development of its original Floating-Hub caster, previously described IEN-3-43, to include a complete Floating-Hub axle assembly. It can mount pneumatic, semi-pneumatic or cushion type tires with conventional wheel mounting bolts as in the automotive industry.

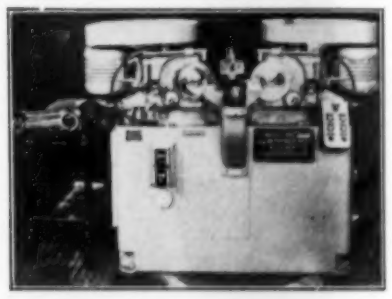
The unit employs a stub axle as an integral part. This stub inserts into tubing or a clamping bracket while the mounting plate bolts to the wheel hub. Application is completed by threading the spring anchor into place and also securing the recoil stop a little forward of the anchor pin and its recoil bumper. The assembly has been produced for military trailers rating ½ ton. Larger assemblies, rating 1, 1½ and 2 ton, are under development.

The design and location of the load carrying spring, with reference to the suspension and the wheel center, permits quick deflection of the wheel toward the rear when it hits an obstacle or rough spot. This is followed by immediate recovery to keep the impact, winding stress and vibration from being transferred to the vehicle. The wheel backs away from the impact, climbs up, around and over the obstacle without bouncing or interfering with forward vehicle movement. The wheel itself is balanced and rides on true centers on precision bearings. The design is particularly suited for vehicle speeds in excess of 20 miles per hour.

If you write maker identify as IEN - 6201

SAWING . . Circular blade machine cuts caps from forged connecting rods

Source: **MOTCH & MERRYWEATHER MACHINERY CO.**
715 Penton Bldg., Dept. IEN, Cleveland 13, Ohio



Built to order

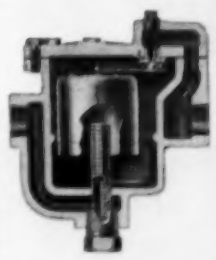
Two heads, in right and left hand assembly, ride on hardened ways to carry circular saw blades in this new Model 00-2CR machine. The heads are operated by hydraulic feed cylinders to approach simultaneously from each side of a connecting rod forging that has been clamped in work position. Clamping also is by hydraulic cylinder.

The heads approach to cut the cap from the rod forging at the connecting rod end. Then they retract to starting position so the machine can be unloaded and reloaded. Each head is driven by a 2-hp. motor. Controls center at a panel at the right hand side of the operator's position. Coolant is delivered to both blades by motor driven equipment mounted in the machine base.

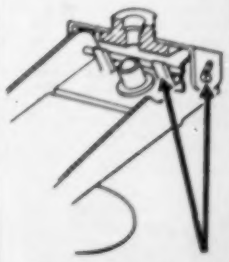
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6202

NEW TRAP



Sarco *Camlift* Bucket Trap



Cams lever valve off seat; slot and pin provide maximum valve opening

handles more volume in less time!

Sarco uses the principle of the fulcrum and lever in this newly designed trap and gives you greater discharge at no increase in trap size. Result: more for your steam trap dollar.

It's all made possible by the Sarco *Camlift* valve mechanism which provides the force needed to open the large valve without a corresponding increase in trap size.

See for yourself how this small inverted bucket trap gives you maximum capacity.

Write for free trial trap giving pipe size, capacity, and pressure conditions.

SARCO COMPANY, INC.
EMPIRE STATE BUILDING, N. Y. 1, N. Y.

If you write maker identify as IEN - 6203

Just out. Free Bulletin No. 152 gives operating characteristics, capacities, sizes and dimensions for new line of low-priced Denison Series M Relief Valves for pressures to 2000 psi. Write for it today.

THE DENISON ENGINEERING CO.
1150 DUBLIN ROAD • COLUMBUS 16, OHIO

LEADING DESIGNER AND MANUFACTURER OF HYDRAULIC PRESSES AND COMPONENTS

If you write maker identify as IEN - 6204

SAVE... TIME MONEY TROUBLE

Baldwin Rex Sprockets with Taper-Lock Bushings

Here are the sprockets that give you quick, off-the-shelf delivery...are quick to put on or take off the shaft...and that save you money. Just assemble sprocket and bushing and lock them on the shaft. No re-boring, key seating or set screws required. Get all the cost-saving facts. Send for your copy of Bulletin 53—21. Write Chain Belt Company, 4675 W. Greenfield Ave., Milwaukee 1, Wis.

CHAIN BELT COMPANY

If you write maker identify as IEN - 6205

Solves Big Problem for Small Boiler Operators!

Buell 'LR' Collector gets 99% of all 100-mesh and larger cinder discharge. Top efficiency for boilers from 100 to 2000 BHP.

Draft loss so low you can use 'LR' on the smallest natural draft boilers.

Get all the facts—write for 'LR' Bulletin. Buell Engineering Company, Dept. 22-F, 70 Pine Street, New York 5, New York.

If you write maker identify as IEN - 6206

For Tractor Trailer Operation

2-TON HEAVY-DUTY INDUSTRIAL TRAILER

This Thomas "GENERAL" is doing a thousand heavy-duty jobs all over the world—in freight stations, warehouses, industrial plants, wherever a staunch, easy-running, caster-type trailer of time-proved design is needed. Rugged. 4000 lbs. capacity. Foot operated release disengages Safety Automatic Coupler quickly, safely from either side. Available with chemical resistant tires.

THOMAS TRUCK & CASTER CO.
447 Mississippi River
Keokuk, Iowa

Send for free literature

If you write maker identify as IEN - 6207

TRICO

KLIPLOK CLAMPS FOR FUSE CLIPS

- Step Up Production
- Stop Heating and Arcing at Contacts
- Eliminate Burnt Fuses and Clips
- Prevent Fire and Accident Hazards

TRICO "Kliploks" lock fuses and clips together and assure smooth, easy flow of current. Easily and quickly installed. . . . Low in cost. . . . Pay for themselves many times over. There's a size and type for every fuse clip.

Also Handy for:
- Cable Splicing
- Topping to Bus Bar
- Drilling, Soldering, etc.

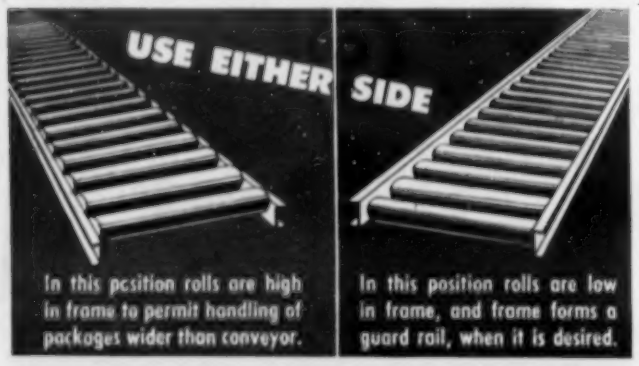
Write For Bul. No. 6

TRICO "Kliplok" TEST CLAMPS

Handy for temporary connections. Clamp flat or round objects. Attached in a jiffy. 7 sizes 0 to 30 Amps.
Write For Bul. No. 7

TRICO FUSE MFG. CO. MILWAUKEE, WIS.

If you write maker identify as IEN - 6208



ONE of MANY practical features of *Logan*

STOCK ROLLER CONVEYOR

Shown above is one of the features of Logan Stock Roller Conveyor. Other features include (a) immediate shipment (b) available in several sizes (c) both straight and curved sections can be furnished (d) both stationary and portable supports available.

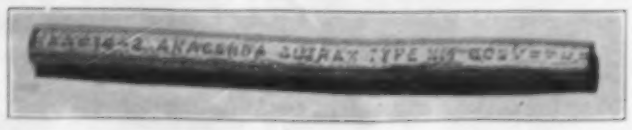
Use the coupon for literature.

Logan
CO., LOUISVILLE, KY.
nd literature on Stock Conveyors

If you write maker identify as IEN - 6209

CONDUCTOR . . Electric cable with non-sticky non-metallic sheath

Source: ANACONDA WIRE & CABLE CO.
25 Broadway, Dept. IEN, New York 4, N. Y.



Strips easily

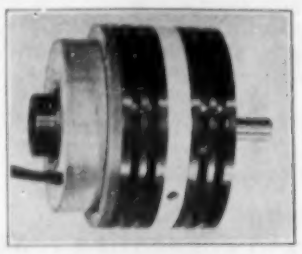
Silver Dutrax trade names a new non-metallic sheathed cable. It presents a smooth clean surface that will not resist pulling through joists and will not stain or soil. The cable is available in twin conductor assembly in sizes from No. 14 to No. 8 and in three-conductor with sizes from No. 14 to No. 6. Standard lengths are 250-ft. coils for sizes No. 14, 12 and 10 and 125-ft. coils for No. 8 and 6.

Tests of the cable in storage in cartons for three days at 170 deg. F. showed no appreciable stickiness. The cable was tack free and coil layers were free from each other so the coil was free to feed out. Cable similarly stored at temperatures to minus 25 deg. F. did not flake off or peel in use and did not mar wall surfaces.

If you write maker identify as IEN - 6210

DRIVE . . Magnetic fluid clutch rates 50 in. lb., ⅔ hp., at 800 rpm.

Source: RAYMOND ENGINEERING LAB. INC.
Smith St., Dept. IEN, Middletown, Conn.



Bulletin on request

Raymond 731B designates a new clutch enclosing a grease-like lubricant in which fine magnetic particles are suspended. Application of dc., to the coil enclosed in the clutch, causes the lubricant to "stiffen" in proportion to the input current and to act as a clutch "lining" to produce a driving torque. The dc. can be applied from the plate of a conventional vacuum tube or suitable rectifier. It can be varied to suit varying drive requirements. Standard coil resistance is 1,700 ohms. Coil current of 75 ma. provides full torque.

The assembly includes ball bearings and fluid seals with weight at 3½ pounds. Overall dimensions are 3¼ in. in diameter by 3¾ in. in length. List price is $195 in single units.

If you write maker identify as IEN - 6211

Drum Lifter is a new combination of four Merrill-Volz load handling clamps and a multiple-part chain sling to pick up and carry four steel drums at one time. Each Drum Lifter clamp will handle 1,000 lb. so the assembly can be employed to pick up a two-ton load. Grip opening in the Lifter measures 1¼ inches. Merrill Brothers, 56-02 Arnold Ave., Dept. IEN, Maspeth 78, N. Y., is the manufacturer of the new handling assembly.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6212

WAYNE *Production-Booster* HOSE REELS

EASY TO USE: Pull tool or spray gun to required hose length . . . it locks firmly. Slight pull releases catch and hose rolls back automatically to predetermined setting—just like a window shade!

HANDY TO USE: Tools are out of the way but always within easy reach. Mounts in any position, permits centrally located tool for use by several operators, or one. Saves working space, too.

WORK-SAVING: Cuts waste motion, lessens worker fatigue, widens work-radius. Finger-tip control of tools. Quick installation, easy adjustment, simple maintenance.

Besides all this, the Wayne Hose Reel saves wear and tear on your hose, reduces drop-breakage of tools, prevents accidents caused by loose hose.

Write for illustrated data folders on cost-cutting, job-engineered Wayne Production-Booster Hose Reels.

Compare These Wayne Advantages

- Automatic Rewind
- Rubber Bumper Stop
- Hose I.D. Sizes, ¼", ⅜", ½"
- Powerful Spring Motor
- Constant Spring Tension
- Rugged Steel Construction
- Open or drum-type Models
- Automatic Brake
- Universal Bracket
- Hose Lengths, 15' to 50'

INDUSTRIAL HOSE REELS for Air, Water, Grease, Oil, Fluids

Wayne — NATION WIDE SERVICE

THE WAYNE PUMP COMPANY
SALISBURY, MARYLAND
TORONTO, CANADA

If you write maker identify as IEN - 6213

LEVIN MICRO-DRILL PRESS

FOR VERY SMALL HOLES DOWN TO .002"

Designed to hold small drills in precision collets, thus overcoming the difficulty of making a drill run true as when held in a conventional drill chuck. Absence of a sliding quill guarantees maximum sensitivity with fingertip control. A mounted ⅛" capacity chuck can also be used.

Send for Catalog L describing Micro-Drill Press, full range of collet sizes, accessories and other precision tools

LOUIS LEVIN & SONS, INC., 3610 S. Broadway, Los Angeles 7, Calif.

If you write maker identify as IEN - 6214

STONEHOUSE SIGNS FOR ACCIDENT PREVENTION

SAFETY IS NO ACCIDENT

Now, more than ever, the safeguarding of industrial workers is vital to maximum production. Every accident slows up operations.

Stonehouse Accident Prevention Signs cover every conceivable hazard. Hundreds of stock-worded signs are ready for prompt shipment. • Special wordings also produced to your specifications.

Our complete Catalog No. 9, in full color, is free on request.

Stonehouse SIGNS, inc. MANUFACTURERS
Stonehouse Building · 842 Larimer
Denver 4 Colorado
"Signs Since 1863"

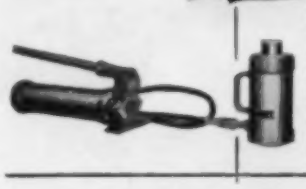
ACCIDENT PREVENTION SIGNS IN STANDARD COLORS AND DESIGNS

If you write maker identify as IEN - 6215

New Safety! New Efficiency!

for ANY PULLING . . . PUSHING . . . LIFTING JOB

with the right SIMPLEX HYDRAULIC EQUIPMENT



Re-Mo-Trol PULLERS

Hydraulic Pumps and remote-controlled Rams for pulling wheels, gears, shafts, etc.; also pushing and lifting in any direction *from a distance*. Safe, smooth, powerful. 10 to 100 ton capacity units. Unique Center-Hole simplifies rigging.

SIMPLEX JENNY

Self-contained Hydraulic Pullers with famous Center-Hole for easy pulling, pushing, lifting. Rugged, versatile; 6 models, 30 to 100 ton capacities.

SIMPLEX HYDRAULIC JACKS

Sturdy, safe, efficient units to do any lifting job easy and fast. 8 models; 3 to 100 ton capacities. Also 10 and 25 ton models with toe lifts.

Get full information on the most complete industrial line of Hydraulic Jacking equipment; write for Bulletin: 53.

Simplex LEVER · SCREW · HYDRAULIC Jacks

TEMPLETON, KENLY & CO.
2527 GARDNER RD., BROADVIEW, ILL.

If you write maker identify as IEN - 6216

Make Stronger Fastenings this easy way

PARKER-KALON®
FASTENERS

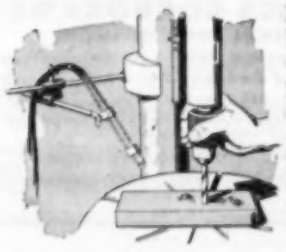
If you write maker identify as IEN - 6217

New ways to reduce costs with CARBOLOY® ALNICO-TYPE permanent magnets

Removing small parts from centerless grinder.

You can speed setups, production and salvage work, by using Carboloy permanent magnets.

These alnico-type magnets are unaffected by heat, moisture and vibration. They offer lasting, permanent energy for innumerable holding, lifting and separating jobs. They cost nothing to operate – eliminate many clamps, vises, jigs, fixtures and other costly units – save you time and money shopwide.



Positioning coolant hose on drill press column.

Send today for your *free* Magnet Idea Literature Kit. It shows you how other shops use Carboloy permanent magnets. Contains full details and diagrams. Send also for Carboloy "You-Try-It" Shop Packages. They may well spark you to even greater savings in your plant. See coupon.

Get the "YOU-TRY-IT" Magnet Assortment

Shop Package No. 1

Shop Package No. 1 – Contains 48 Carboloy permanent magnets: 8 styles – 3 pairs each. Magnetic pull up to 2 lbs. per magnet. Price $10.00 (subject to applicable sales and use taxes). Order today.

Shop Package No. 2

Shop Package No. 2 – Contains 18 magnets: 4 styles – 2 pairs each; and 1 style–1 pair. Magnetic pull from 3 lbs. to 12 lbs. per magnet. Price $15.00 (subject to applicable sales and use taxes). Order today.

"Carboloy" is the trademark for products of the Carboloy Department of General Electric Company

CARBOLOY
DEPARTMENT OF GENERAL ELECTRIC COMPANY
11177 E. 8 Mile Ave., Detroit 32, Michigan

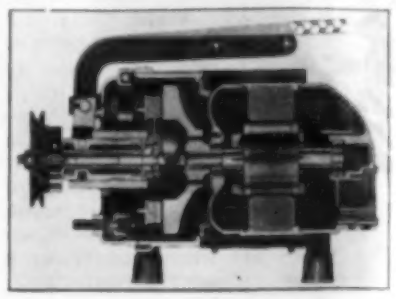
☐ Send me free Magnet Idea Literature Kit.
☐ Send me _____ Shop Package No. 1 at $10.00 each.
☐ Send me _____ Shop Package No. 2 at $15.00 each.
☐ Enclosed is check or money order for $_____ ☐ Send C.O.D.

Name _____ Title _____
Company _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 6219

DRIVE . . Motor, clutch and brake in lever operated single unit assembly

Source: DIEHL MFG. COMPANY
1194 Finderne Ave., Dept. IEN, Somerville, N. J.



Bulletin 3303

Power Transmitter Type J designates a new unit assembly of totally enclosed fan cooled motor with a lever operated friction clutch and brake for equipment drive that requires frequent starting and stopping. The motor is available in a variety of single phase or polyphase ratings starting with ¼ hp. and extending to 1-½ hp. on synchronous speeds of 900, 1,200, 1,800, and 36,000 rpm. Larger sizes, to 5 hp., are available to order.

The operating lever lies parallel to the housing and requires movement through only a short distance, either manually or by power. Pressure of 5 lb. is sufficient to engage the clutch. Forty or more starts and stops can be made per minute in continuous duty. The rotating parts ride on factory lubricated and sealed ball bearings that require no lubricating attention.

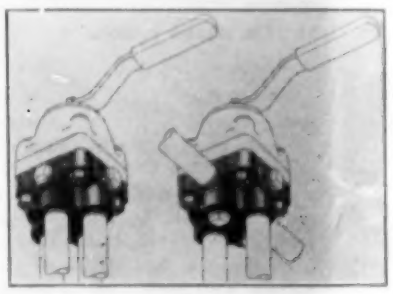
A flywheel is mounted on the motor shaft to absorb shock when the clutch engages and to form the driving face for the friction clutch itself. The friction discs are mounted on a ball bearing shaft that rides in a sliding sleeve connecting to the operating lever. A brake applies on the rear face of the frictions to engage when the lever is moved from "start" to "stop" position. A special single-groove V-belt drive sheave, ranging from 1¾ to 6 in. in diameter, mounts on the output side of the unit. Double groove sheaves are available also in a range of sizes. One can be changed for another after removing a locknut.

The assembly is available with a mounting base for belt adjustment or can be installed rigidly. A 1-hp. assembly, with synchronous operation at 3,600 rpm. and full load speed of 3,450 rpm., weighs 44 lb. and lists at $128. It measures 15½ in. in overall length by 9½ in. in width including the lever when it is assembled at the side of the housing.

If you write maker identify as IEN - 6220

VALVE . . Threaded sub-base for quick Shear-Seal valve replacement

Source: BARKSDALE VALVES
5125 Alcoa Ave., Dept. IEN, Los Angeles 58, Calif.



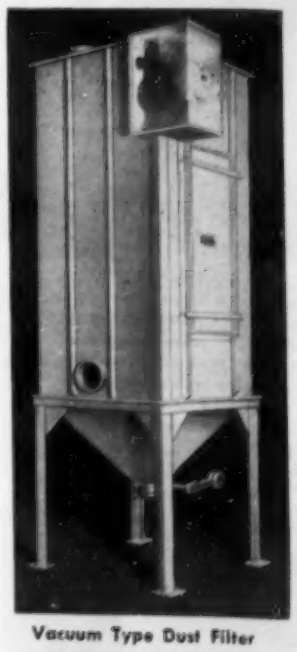
Two arrangements

Pipe lines are made up permanently from the bottom, as in Fig. 1, from four sides or in combination, as in Fig. 2, to this new sub-base. It has been developed for the company's ½-in. four way operating valve. The base is particularly suited for production line installations to minimize "down" time. A valve can be removed after removing four bolts, without disturbing the piping. The valve itself, previously described IEN-12578-53, is available for vacuum to 2,000-lb. compressed air and to 3,000-lb. water or oil.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6221

RUEMELIN *Dust Control* EQUIPMENT



Vacuum Type Dust Filter with Electric Bag Shaker.

Ruemelin Dust Filters achieve a high rate of efficiency in the control of fine dusts. Our tubular bag design provides —

- Low resistance to air flow.
- Thorough shaking of bags while fan is shut down. Eliminates lautness.
- Maintenance, inspection and replacement of tubes made easy by our patented design.

Ruemelin Filters handle dusts created in metal working plants, foundries, cement mills and many similar industrial applications. Sizes from 250 to 30,000 cfm. Over 2000 collectors in service. Write for bulletin 24-D.

RUEMELIN MFG. CO.
3863 N. PALMER STREET MILWAUKEE 12, WIS., U. S. A.
MANUFACTURERS AND ENGINEERS — SAND BLAST AND DUST COLLECTING EQUIPMENT — WELDING FUME COLLECTORS

If you write maker identify as IEN - 6222

TO ADD BEAUTY, COLOR AND SALES APPEAL
FOR CUSHIONING
FOR SILENCING

FOR A DURABLE PROTECTIVE COATING

INVESTIGATE *Cellusuede* FLOCK

THE PRODUCT FINISH *with* A THOUSAND USES

Every day product designers, industrial finish and material engineers are finding new, profitable uses for Cellusuede Flock—industry's most versatile product coating. With these cotton, rayon or hair fibers, you can add new beauty, color, and sales appeal to your product, provide a durable protective finish, silence noises, or dampen vibration. Best of all, the soft velvet-like Cellusuede finish is easy to apply to wood, metal, plastic, fabrics, leather, cardboard, or paper surfaces, either on a modified or production line basis. It's inexpensive, more durable than fabric, and readily available in a wide range of textures and beautiful colors. Investigate today the profit possibility of using Cellusuede for your product.

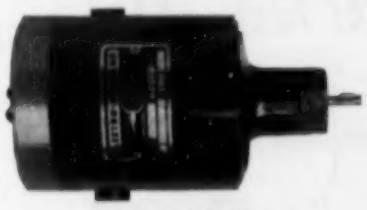
FREE BULLETIN — SAMPLES, TECHNICAL SERVICE

Write for 12-page bulletin illustrating profitable uses and applications. For help with a specific job, Cellusuede's technical service and unexcelled facilities are available for producing samples to meet your needs.

CELLUSUEDE PRODUCTS, INC.
Producers of Natural and Synthetic Flock
520 N. MADISON STREET • ROCKFORD, ILL.

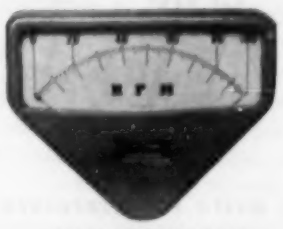
If you write maker identify as IEN - 6223

Read R. P. M. at Any Distance
with Electro-Mechano Tachometers



Type 109 GENERATOR
DC Output $97.50 list

Type 104 GENERATOR
AC Output $36.50 list



Model 30 METAL CASE INDICATOR

Sustained accuracy for Production, Construction, Engines, Machine Tools, & Laboratory use—with indicator hundreds of feet from source.

We specialize in custom scales calibrated any ratio to output shaft in RPM, FPM, Gal/Min etc. Drive generator direct or thru pulleys, gears or S.A.E. drives. No battery or external power used.

Type 109 Generator with DC output shows speeds as well as direction of rotation. Steady full scale readings at 0-50 RPM up to 0-2500 RPM. Completely sealed in sturdy housing. Oversize silver carbon brushes are serviceable from without.

Type 104 Generator with AC output shaft speeds from 0-1000 RPM up to 25,000 RPM. C. or C.C. rotation gives equal output. Aluminum castings house lubricated and sealed armature ball bearings. No servicing required.

Indicators in 7 styles with scales to your specifications. Accurate with ½%, 1% or 2%. Sizes from 2½" round to 9" square flush or console mount. Priced from $23.50 to $70.00 including special scale to your spec's.

Submit your problem without obligation

Write for FREE catalog.

The **ELECTRO-MECHANO** *Co.*
269 E. ERIE STREET, MILWAUKEE 2, WIS.

If you write maker identify as IEN - 6224

For *Real* Economy

Do ALL Your Cleaning Jobs with ONE Cleaner

The IDEAL STANDARD CLEANER

The ALL-PURPOSE Combination Unit
1⅓ H.P. or ⅔ H.P.

A "tank-type" cleaner—VACUUMS lint, dirt, dust, scrap and *picks up water.* Has dust-tight bag and 12-gal. tank. Power unit also serves as blower, sprayer or "hand-type" vacuum cleaner. Attachments for every use.

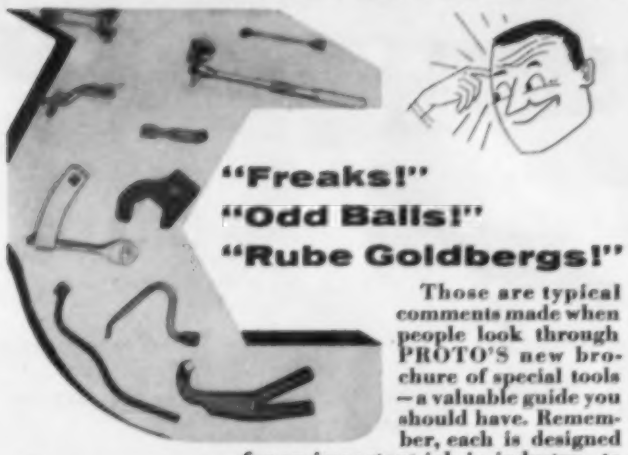
Sold through Leading Distributors

A "TANK-TYPE"— A "HAND-TYPE"— AND A BLOWER . . . ALL IN ONE INSTANTLY CONVERTIBLE UNIT

TRY IT FREE!

IDEAL INDUSTRIES, Inc.
1108 Park Avenue, Sycamore, Illinois
Please Send FREE IDEAL Standard Cleaners catalog data.
Name.....
Company.....
Address.....
City.....Zone....State.....

If you write maker identify as IEN - 6225



"Freaks!" "Odd Balls!" "Rube Goldbergs!"

Those are typical comments made when people look through PROTO'S new brochure of special tools—a valuable guide you should have. Remember, each is designed for an important job in industry—to break a production "bottle-neck," to handle unusual repairs, to service manufacturer's original equipment, etc. Special PROTO tools cut costs for industries and Government...and can do the same for you. PROTO engineers will help you solve your special tool problems. Your PROTO dealer will consult with you and aid in getting just the tools you need. Write today for brochure No. 5328 on special tools ("Odd Balls") to

PLOMB TOOL COMPANY
2271S Santa Fe Ave., Los Angeles 54
5488

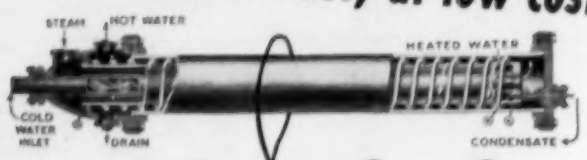
PROTO Makes Forgings, Too

With modern die-making facilities, drop hammer forges, high-speed forging machines, upsetters and hot forming equipment, PROTO can make almost any type of forging. Plants in Jamestown, N.Y., and Los Angeles, California, speed service.

PROTO TOOLS
PROTO means PROfessional TOols

If you write maker identify as IEN - 6226

STEAMLINED!
to heat water fast, at low cost



In the Johnson Heater, water to be heated is routed first inside, then outside, a blanket of live steam. It's full pressure steam, too; up to 150 lbs., or 250 lbs. in heavy duty types, no reducers are needed. The result: faster, more efficient heat transfer for a unit of its size. No wonder industry has found so many applications for the Johnson "Instant" Heater, in heating water and process liquids of various types.

Sizes for all needs; write for literature

The Johnson Corporation
846 Wood St., Three Rivers, Mich.

If you write maker identify as IEN - 6227

the LAPMASTER
will provide you with possibilities for product improvement through precision flatness and finish

The Lapmaster is an amazingly versatile machine, capable of generating surfaces of precision flatness and finish in short runs or in high production quantities. The illustration above indicates the wide range of parts and materials that can be handled on Lapmasters. Parts include materials such as monel, steel, tool steel, bronze, cast iron, stainless steel, quartz, ceramics, plastics, carbides, etc.

Manufacturers of all types of products have found that by specifying lapped finish they have been able to improve product performance. Precision flatness and finish on a production basis is easily obtained with the Lapmaster. Tolerances of .0000116" or less—micro-inch finishes of 2 to 3 RMS can be maintained consistently.

You can improve performance of your product, reduce its overall cost by specifying Lapmaster flatness and finish.

Learn about the possibilities of production lapping and the subject of measuring flatness. The illustrated fact filled booklets are yours for the asking.

Crane Packing Co., Dept. IEN-6, 1815 Cuyler Ave., Chicago 13
In Canada: Crane Packing Co., Ltd., 617 Parkdale Ave., N. Hamilton, Ont.

Lapmaster

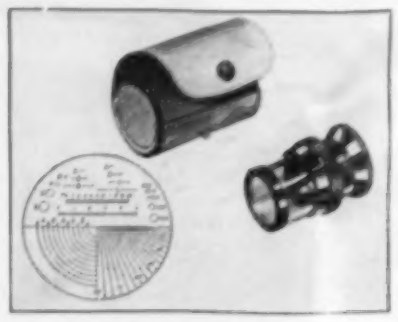
CRANE PACKING COMPANY

"Protected by U. S. and Foreign Patents."

If you write maker identify as IEN - 6228

GAGE.. Optical comparator, 6X lens, for precision parts inspection

Source: INTERNATIONAL DEVELOPMENT CO.
One S. Reed St., Dept. IEN, East Riverton, N. J.



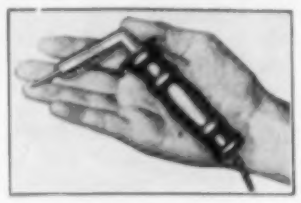
Diameter 1½ inches

Angles, small diameters and radii, microscopic lengths, are all measured by observing a work piece through the glass inscribed reticle of this new Indeco comparator. Measurements can be made of tool wear, chamfer angles, small part tolerances. Dimensions are observed in magnified coincidence with the standard markings on the reticle so any deviation from these markings is immediately apparent. The gage is packaged in a pocket size suede lined pigskin carrying case at an introductory list price of $17.50. This price is subject to withdrawal without prior notice.

If you write maker identify as IEN - 6229

SOLDERING.. Electric iron for delicate instruments and circuits

Source: HEXACON ELECTRIC CO.
155 W. Clay Ave., Dept. IEN, Roselle Park, N. J.



Hatchet Iron

The handle of this new iron is mounted at a little more than 90 deg. with the portion containing the electric heating element and tip. The extension cord extends from the handle end. The complete assembly weighs 3 oz. and is available for operation on 110 or 220-volt ac, or dc. Rating is 25 watts with a ⅛-in. tip, 30 watts with a $\frac{3}{16}$-in. tip. List price for each is $5.50.

If you write maker identify as IEN - 6230

STORING.. Pivoted plastic bins for small parts on wall bracket

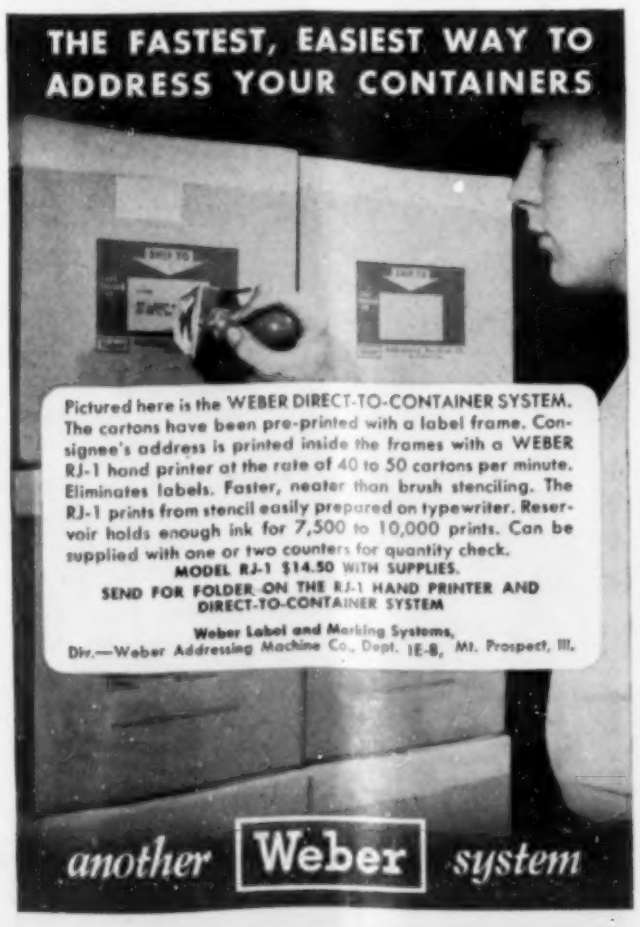
Source: AKRO-MILS INCORPORATED
820 E. Market St., Dept. IEN, Akron 9, Ohio

About $4

Swing-Bins trade names a new assembly of six transparent plastic parts holders equipped with sliding dividers to make four compartments in each. Overall length is 9½ inches. Front to back measures 2½ in. and depth is $\frac{1}{16}$ inches. The plastic units hinge or pivot on a wall bracket. Three colors are available in addition to the clear assembly shown in the illustration.

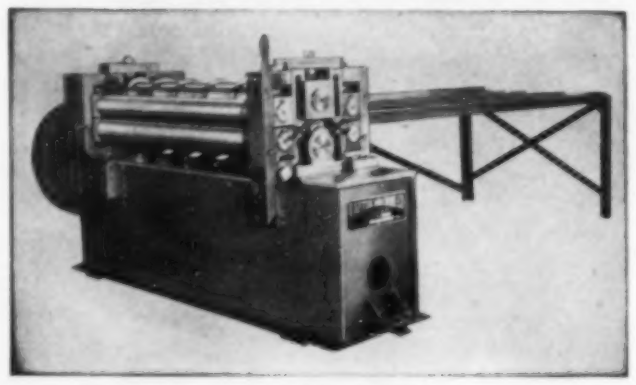
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6231



If you write maker identify as IEN - 6232

RAFTER GANG SLITTER
For Lasting Accuracy



With or without feed rolls for the slitting of varied widths and gauges of metal. Machined and accurately ground cutter shafts made of high-grade carbon steel. Machine cut gears. Generous size bearings. Vertical adjustment of upper spindles allows regrinding of double edge type cutters. By removing two bolts, the end housing is drawn from cutter shafts permitting quick change of cutters. Spacer collars machined and marked for particular job, easily and simply removed for change over of various slitting widths. All features represent accuracy, speed and economy.

RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street **Belleville 9, N. J.**
COLD ROLL FORMING MACHINES & PRESS BRAKE FORMING DIES

If you write maker identify as IEN - 6233

The New FLEXON Expansion Joint Design Guide

Now at last, comprehensive, up-to-date information on the absorption of motion in piping has been gathered together in one easy-to-use booklet. It's the new Expansion Joint Design Guide.

Much of the information presented is available nowhere else; all of it helpful to anyone responsible for the design, installation or maintenance of piping. Copies are available without charge. Write today.

FLEXONICS CORPORATION
EXPANSION JOINT DIVISION
Formerly Chicago Metal Hose Corporation
1333 S. Third Avenue, Maywood, Illinois
Manufacturers of flexible metal hose and conduit, expansion joints, metallic bellows and assemblies of these components.
In Canada: Flexonics Corporation of Canada, Ltd., Brampton, Ontario

Sturdy, Strong, Band-Saw Guide

MODEL 20

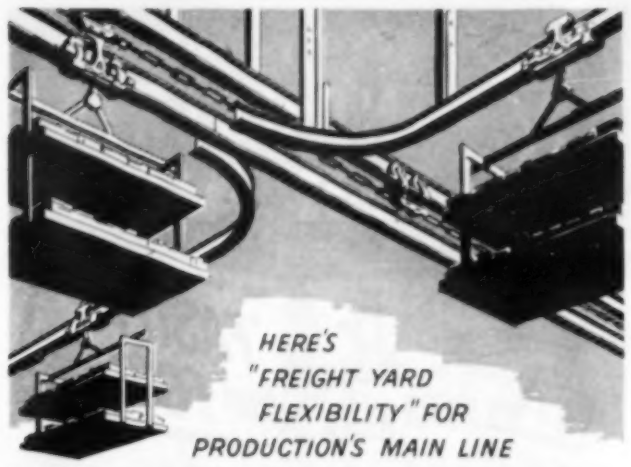
Paddock
BALL-BEARING
BAND SAW GUIDES

A sturdy guide that lasts for years, MODEL 20 can be installed on machines having 2½" back of blade to guide post and is designed to work above or below saw table. Cut-out section of illustration shows V-shape groove of thrust wheel which supports and holds back of blade. Interchangeable ball-bearing wheels run with blade and give friction-free support to blade. Easier and better adjustment for thrust wheels for ⅛ to 1¼" wide blades. Models for large or small machines. Write for complete details. Give size, make of machine on which guide will be used.

SHIPPED ON APPROVAL
WHERE VALUE IS QUESTIONED

PADDOCK TOOL COMPANY
GUIDE MAKERS SINCE 1920
1418 Walnut Street **Kansas City, Missouri**

If you write maker identify as IEN - 6235



MHS Power and Free Conveyors

An MHS Power and Free system can include moving assembly lines, automatic and selective switching to test stations, repair and storage, automatic transfer from free lines back to power.

MHS Power and Free conveyor systems are designed, engineered and built with the skill, production understanding and practical imagination that has furnished outstanding materials handling systems to industry for 34 years.

Write for Bulletin PF2.

MECHANICAL HANDLING SYSTEMS INC. AND SUBSIDIARIES
4605 NANCY AVE., DETROIT 12, MICH.

Offices in Principal Cities
FACTORIES: Detroit, Mich. • Fairfield, Iowa • Albany, N.Y. • Windsor, Ont.

If you write maker identify as IEN - 6236

For concentrated HEAT for confined areas

CHROMALOX *Electric* CARTRIDGE HEATERS

SAFE • EFFICIENT • EASY-TO-INSTALL

Chromalox Electric Cartridge Heaters provide dependable heat when and where you need it at the temperatures you require. Dies, molds, platens, moving parts, etc. are quickly and accurately heated to controlled temperatures required for most efficient production. Lengths up to 40", diameters ⅜" to 3½", ratings 30 to 8750 watts.

GET CHROMALOX CATALOG 50 For Complete Details

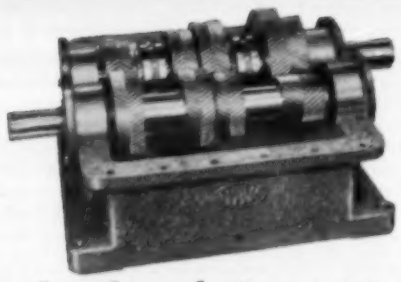
Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.

See Chromalox Electric Heaters Advertisement, Page 5

CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 6237

Philadelphia CHANGE-SPEED UNIT



Standardized Construction
—*to give you Greatest Economy*

Based on long experience in building Change-Speed Units to individual specifications, Philadelphia has developed a line of *standardized* units. This cuts the high cost and delayed deliveries of former methods.

Units are positive geared drives using herring-bone gears throughout. No belts to wear or slip. Ratios are definite for speed increasing or reduction or in combination. Wide range of horsepowers in 2, 3 and 4 speed units.

Write for catalog giving full details.

PHILADELPHIA GEAR WORKS, Inc.
ERIE AVENUE AND G STREET • PHILADELPHIA 34, PA.
NEW YORK • PITTSBURGH • CHICAGO • HOUSTON • LYNCHBURG, VA.

If you write maker identify as IEN - 6238

FEEDING . . Electric vibrating unit advances work pieces on circular path

Source: PERRY EQUIPMENT & ENGINEERING CO.
3125 Brandes St., Dept. IEN, Erie, Pa.

Bulletin, "Laboratory Feeders"

A new line of hard chromium plated bowls has been added to the company's line of laboratory feeders to provide work paths that will not wear smooth, but will retain their original finish for sustained operation on a predetermined setting. The new bowls are made of cast aluminum alloys. Special bowls also are available coated with cured rubber to handle fragile and delicate parts.

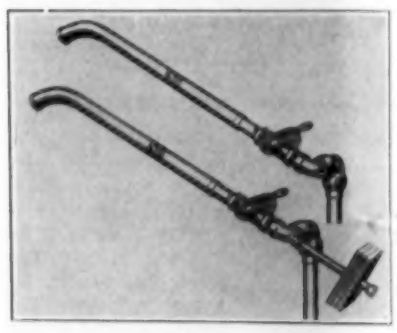
The feeder sets up rotary vibrating action that causes work pieces in the bowl to move toward the outer circumference and proceed along a circular path just inside the outer rim for delivery at a preselected point. One or more paths can be set up. The paths themselves can be designed so they will shed pieces back into the bowl that are not being moved along right side up.

Four vibrator sizes have bases measuring 5 by 5 in. to 22 by 22 in. and height at 5½ to 14 inches. The smallest unit takes a 6-in. bowl. The largest one is standard with a 24-in. bowl. List price, with the bowl assembled, is $200 to $825. Developed assemblies, representing units that are completed for selected feed to specification, are available at $250 and up to $875 and up. Standard operation is on 110-volt, 60-cycle ac. Other voltages can be specified. The company is prepared to design and build the equipment to handle specified parts for delivery in specified positions and at desired rates.

If you write maker identify as IEN - 6239

DISPENSING . . Nozzle, valve, and swivel joint to handle liquids

Source: OPW CORPORATION
2735 Colerain Ave., Dept. IEN, Cincinnati 25, Ohio



Ready to apply

Number 720, with a counterweight, and No. 721, in plain construction, are new assemblies of nozzle, lever operated valve and swivel joint to mount a pipe line. Both are designed for gravity flow or for pressure to 30 lb. in a 2-in. size and to 25 lb. in the 3-in. size that comprise the line. The valve is made of bronze with a built-in dash pot to close without line shock. The bronze swing joint is double ball bearing construction.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6240

An improved bonding cement for brick and tile

Superior workability, greater economy and longer pot life are integral components of COROBOND . . . an improved synthetic resinous bonding cement for brick and tile. Acid, alkali, and solvent-proof . . . COROBOND spreads easily, will not extrude from bottom courses, and provides high mechanical strength. Liquid and powder are supplied in proper ratio to insure a perfect mix every time. Longer pot life eliminates waste when large batches are mixed.

For faster curing, complete adherence to brick or tile, and long-lasting wear resistance, specify COROBOND bonding cement.

Write today for literature

THE CEILCOTE CO.
CORROSION PROOF MATERIAL AND CONSTRUCTION
4840 RIDGE ROAD • CLEVELAND, OHIO

1998-CC

If you write maker identify as IEN - 6241

COMBAT WEAR
in your plant
in your product

Use Stock Bars of

AMPCO* METAL
Grade 18
Centrifugally Cast

Don't put up with costly wear. Make your bearings, bushings, gears, nuts, etc. out of stock bars of centrifugally cast Grade 18 Ampco Metal — from your own stores or Ampco's Milwaukee stock.

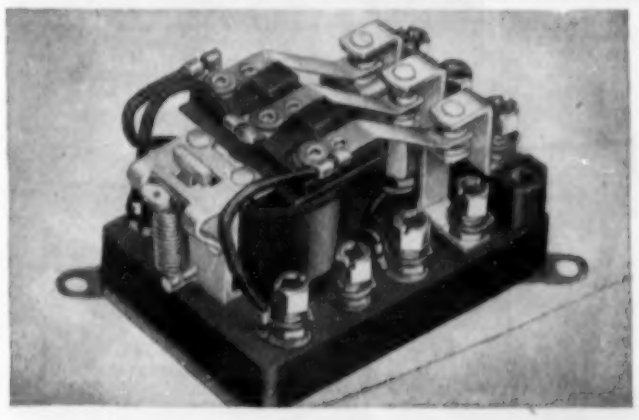
You can get 3 heat-treated variations from Ampco, Milwaukee. Select the one best suited for any particular application by reference to the following table:

	Grade 18	18-13 (H.T.)	18-22 (H.T.)	18-23 (H.T.)
Tensile	105,000	105,000	110,000	110,000
Yield	38,000	35,000	55,000	46,000
Elongation	20.0	20.0	8.0	16.0
Brinell (3000 kg)	187	183	228	207

Stocked in standard 12½" lengths, rough bored, faced one end. Prompt delivery on all sizes from 1⅛" to 3⅞" I.D., 1¾" to 6" O.D. Solid extruded bars, ½" to 4½" also available. Write today for your free wall chart and a 4-page data sheet giving detailed information.

Ampco Metal, Inc., Dept. IE-6, Milwaukee 46, Wis.
West Coast Plant • Burbank, California
D-16 *Reg. U. S. Pat. Off.

If you write maker identify as IEN - 6242



Need a relay for AUTOMATION controls?

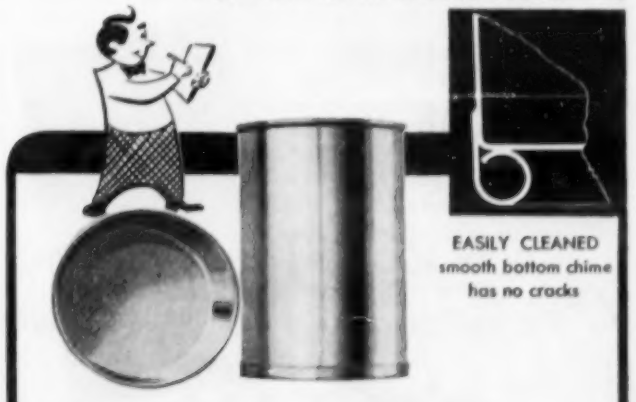
Whether it's for automation, traffic, elevator or instrument control, Ward Leonard's Bulletin 110 relays provide the millions of trouble-free operations required.

Our mechanical design, quality-controlled manufacturing methods and materials, and ample safety factors (both electrical and mechanical) insure this exceptionally long life.

Write today for Relay Bulletin 110. Ward Leonard Electric Co., 33 South St., Mount Vernon, N.Y. 4.11

WARD LEONARD ELECTRIC CO.
Result-Engineered Controls Since 1892
RHEOSTATS • RESISTORS • MOTOR CONTROLS • CHROMASTER

If you write maker identify as IEN - 6243



Compare the Advantages...

...of using Hackney Stainless Steel Containers for batch mixing and in-plant handling: swift, easy cleaning—no product contamination—long useful life.

Compare the cost of cleaning Hackney Containers that have the pressed out *seamless* type bottom—(no crevice). Cost records often show it's more economical to use durable, easy-to-clean Hackney Containers of Stainless Steel.

Available in standard sizes of 20, 30, 50 and 55 gallons. Or write for information on other sizes.

Hackney MILWAUKEE

Pressed Steel Tank Company
Manufacturer of Hackney Products
1449 S. 66th St., Milwaukee 14, Wis.

CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

If you write maker identify as **IEN - 6244**

Quickly, Easily with a

DI-ACRO* NOTCHER

Speed up notching operations, eliminate the need for heavy presses and dies. A 6"x6" notch is made in 16 gauge material in one operation. Also perform many shearing jobs.

NEW DI-ACRO POWER NOTCHER

Especially designed for operations where a high rate of production must be maintained. Motor driven flywheel and all moving parts housed in welded steel cabinet.

WANT MORE INFORMATION?

Send for 32-Page Catalog

*pronounced DIE-ACK-RO

Creators of "DIE-LESS DUPLICATING"

di-acro PRECISION METALWORKING MACHINES

O'NEIL-IRWIN MANUFACTURING CO.
318 8th Avenue, Lake City, Minn.

If you write maker identify as **IEN - 6245**

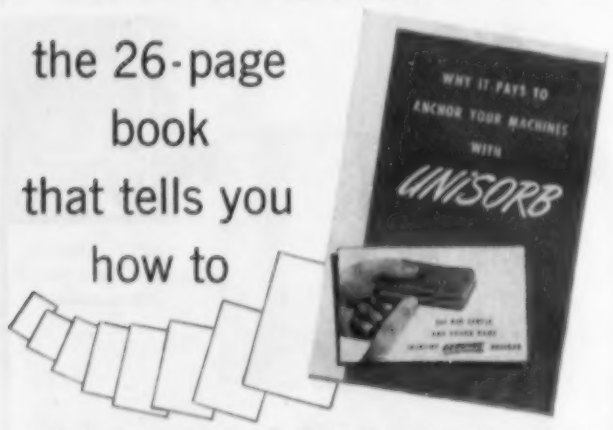
With every press-on foot pedal Model 214 Chicago Double Rivet Setter automatically feeds, inserts and clinches *two* rivets. 14-inch throat accommodates large assemblies. Handles 9/64" diameter or smaller steel tubular rivets—lengths to 7/8". Quick Change Rotary Type Hoppers and Raceways permit a 5-minute changeover to rivets of different size. Adjustable anvils and riveting centers add to versatility. For help with fastening problem...send sample assembly (or a blue print) for free fastening analysis.

FREE CATALOG *contains valuable engineering information and rivet specifications plus illustrated descriptions of 26 Chicago Automatic Rivet Setters.*

Chicago Rivet & MACHINE CO.
9602 West Jackson Boulevard, Bellwood (Chicago Suburb) Illinois
Branch Factory: Tyrone, Pa.

If you write maker identify as **IEN - 6246**

the 26-page book that tells you how to



- ANCHOR MACHINES and eliminate 60-85% of transmitted vibration
- ELIMINATE DRILLING of wood or concrete floors when installing machines
- SAVE TIME and money (up to 30%) on installation costs

For your copy of this valuable book, showing actual plant installations of UNISORB®, return the coupon today.

the **FELTERS** company
208 South Street, Boston 11, Mass.

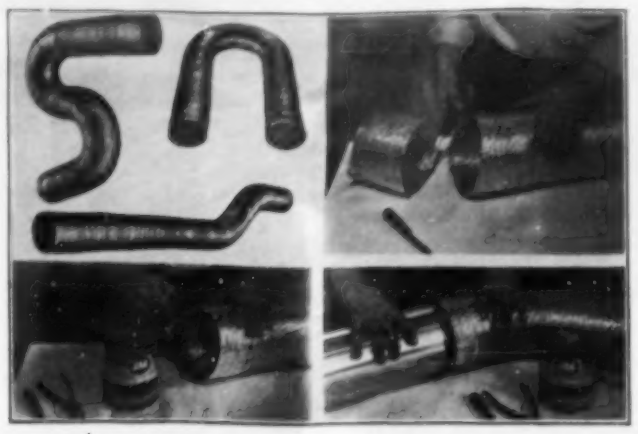
Please send me a copy of FACTS ABOUT ANCHORING YOUR MACHINES WITH UNISORB, at no obligation to me.

Name.....Title.....
(Please print)
Company.....
Address.....
City.....Zone.....State.....
Return to: The Felters Co., 208 South St., Boston 11, Mass.

If you write maker identify as **IEN - 6247**

AIR CONDITIONING . . Flexible duct makes quick and economical installation

Source: FLEXIBLE TUBING CORP. Dept. IEN, Guilford, Conn.



Patent applied for

Branch lines can be assembled in straight runs or can be curved around obstructions by employing this new Thermaflex-A flexible duct in the air distribution lines for an air conditioning installation. Rigid duct, that is out of alignment, can be connected permanently and quickly with a piece of new material. Sizes range from 2 to 10 in. in inside diameter. All are in 12-ft. lengths.

Test pressure ranges from 90 lb. for the 2-in. size to 25 lb. for the 10-in. size. Fifty-nine pounds per sq. in. of hydrostatic pressure can be applied before porosity appears. Retracted length, of a 12-ft. piece of the 2-in. duct, is 6 feet. It measures 3 ft. for the 10-in. size. Inside bend radius is 1 in. for the smallest duct and 5 in. for the largest one. Crush strength is 264 to 225 pounds. Weight is negligible. Temperature range is from 0 to 250 deg. F.

Construction employs a continuous galvanized helix wire covered with a permanently bonded three ply laminate of Fiberglas fabric sandwiched between two layers of aluminum sheet. The aluminum is bonded to the Fiberglas with a resinous elastomeric compound which also binds the aluminum to the helix. The duct is flame proof, has excellent aging characteristics. It is resistant to attack by rodents, termites, insects and fungus.

The aluminum and Fiberglas can be cut with a knife and the helix parted with a cutting plier to obtain a desired length. Installation immediately follows application of a synthetic rubber base adhesive such as Minnesota Mining & Mfg. Company's Type EC-800. This adhesive dries in a few minutes. The flexibility of the duct itself eliminates need for fittings such as elbows. No taping is required with the adhesive.

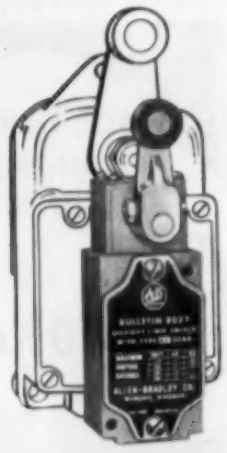
If you write maker identify as **IEN - 6248**

New way to record monthly payments, over a period of four years, is provided by a self-adhesive label that is employed on a 3 by 5-in. record card. The label is made by Avery Adhesive Label Corp., 1616 S. California St., Dept. IEN, Monrovia, Calif.

Samples are available on request to the company.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6249**



Oversize is often a Handicap . . . especially in Limit Switches

The new Bulletin 802T Limit Switch has no useless bulk . . . no excess weight . . . yet it is good for millions of trouble free operations. This oiltight limit switch has double break, maintenance free, silver contacts. Various operating heads are available with different types of pushrods and levers. The interchangeable operating heads may be mounted in any one of four positions to fit any location on your machines. Write for Bulletin.

Allen-Bradley Co.
1312 S. Second St., Milwaukee 4, Wisconsin

ALLEN-BRADLEY QUALITY **LIMIT SWITCHES** A-B

If you write maker identify as **IEN - 6250**

Need Rails—Switches—Frogs—Guard Rails or Track Tools? For best selections and prompt deliveries—try FOSTER—shipments of most items can be made from stocks in our five nationwide warehouses.

RAILS—New and Relaying Foster stocks are being replenished daily. Any items we did not have last week, we'll probably have next week. We match specifications and sizes to meet all your requirements on any job, new installations or replacements. *Call on Foster for all your needs for Industrial Track Equipment and Supplies.*

Write for Track Equipment Bulletin 1E6.

L. B. FOSTER CO.
CHICAGO 4, ILL. HOUSTON 2, TEX.
PITTSBURGH 30, PA. NEW YORK 7, N.Y.

If you write maker identify as **IEN - 6251**

Cost of wasted water @ $1.90 per M. cu. feet is $24.14. If the leak is in a hot water faucet then fuel cost for heating this wasted water will be: $88.91 if coal (9,879 lbs.)†; $91.02 if oil (792 gals.)†; $84.41 if gas (84,411 cu. ft.)†. These figures authenticated Hackensack Water Co.* and American Gas Association†.*

you can stop this needless waste now with Pat'd

'SEXAUER' "EASY-TITE" Faucet Washers

THE ONLY WASHERS BUILT LIKE A TIRE WITH FIBERGLAS RE-ENFORCEMENT

Fiberglas, with a melting point 1200° Fahrenheit, is unaffected by destructive heat of modern superheat water systems; has a tensile strength of 460 pounds per square inch; is non-absorbent and resists all chemicals.

'Sexauer' "Easy-Tites" outwear ordinary washers 6 to 1! ...Now available with a greatly improved special duPont COMPOUND which adds substantially to longer, trouble-free washer service. This COMPOUND keeps washer from going to pieces under extreme hot water, withstands impurities and has superior tensile strength. 'Sexauer' "Easy-Tites" won't spread, split or "mush-out." They outlast all other washers by 6 to 1; save labor on 5 REPEAT REPAIRS, water and fuel and prolong fixture life.

Send for your

Free Catalog!

For water savings, lower maintenance and fuel costs, write for new Edition H. 'Sexauer' "Easy-Tite" washers just one in over 3,000 TRIPLE WEAR plumbing repair parts and tools. It's today's accepted guide for purchasing and maintenance men in thousands of PLANTS, INSTITUTIONS, AND GOVERNMENT AGENCIES that rely on 'Sexauer' repair materials.

'Sexauer' Maintenance Engineer at your service

There's a 'SEXAUER' TECHNICIAN within your quick call who offers a special SURVEY SERVICE that sets up schedule of exact replacement parts for your plumbing regardless of make or age. A postcard will bring him and your NEW catalog promptly.

J. A. SEXAUER MFG. CO., INC., Dept. K64
2503-05 Third Avenue, New York 51 *as advertised in THE SATURDAY EVENING POST*

SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

If you write maker identify as IEN - 6253

QUICK-DISCONNECT
3000 psi

for Low or High Pressure
HYDRAULIC FUEL
and
PNEUMATIC systems

SIZES: ¼" TO 2½"

write for further information

Wiggins
E. B. WIGGINS OIL TOOL COMPANY, INC.
3424 East Olympic Boulevard
Los Angeles 23, California

If you write maker identify as IEN - 6254

Do it cleaner... Do it faster!

with ANACONDA'S new
SILVER DUTRAX*
nonmetallic-sheathed cable

Silver Dutrax has a revolutionary new finish. It won't become sticky... won't flake or peel. It's the cleanest, fastest-working cable today. See your Anaconda Sales Office for samples. *Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y.*

*Reg. U. S. Pat. Off.

54456

the right cable for the job

ANACONDA®
WIRE AND CABLE

If you write maker identify as IEN - 6255

for storing acid

The welded steel Horton tank shown above is used to store sulphuric acid at the Filtrol Corporation's plant in Salt Lake City. It is 40-ft. in diameter by 24-ft. high and holds 225,000 gallons.

This tank is a typical example of Horton structures used throughout industry. When planning welded steel storage tanks, pressure storage tanks, elevated water tanks or special steel plate work, write our nearest office for quotations. State type, capacity desired and location.

CHICAGO BRIDGE & IRON COMPANY
2123 McCormick Building • Chicago 4, Illinois
Atlanta • Birmingham • Boston • Cleveland • Detroit
Houston • Los Angeles • New York • Philadelphia • Pittsburgh
Salt Lake City • San Francisco • Seattle • Tulsa
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA

If you write maker identify as IEN - 6256

GRINDING . . Carbide tool machine with coolant pump for wet operation

Source: CARBIDE PROCESSORS SUPPLY CO.
1304 Harper Ave., Dept. IEN, Detroit 11, Mich.

For general use

A motor at the rear of this new machine drives a horizontal wheel spindle that carries a 10-in. diamond wheel. The spindle head is vertically adjustable by turning a hand crank. Coolant is fed by a motor driven pump through the center of the spindle to issue across the face of the wheel which rides inside a removable guard. A hood, surrounding the table, prevents the atomized coolant from reaching the operator.

Tools are positioned and secured on the centrally located work table. It can be advanced or retracted from the wheel face and can be adjusted above and below horizontal by turning two cranks at the front. The motor rates 1½ hp. It drives the wheel at 2,200 rpm. both forward and reverse.

If you write maker identify as IEN - 6257

FILTERING . . Synthetic felts for use on acid and alkaline fluids

Source: BROSITES PRODUCTS CORP.
50 Church St., Dept. IEN, New York 7, N. Y.

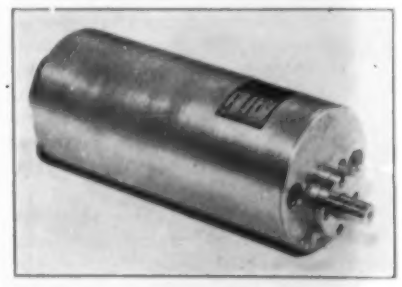
Data and samples upon request

Nylon for use on alkalis and Dacron to handle acids are the materials employed in the new Filtaweb line. Both felts are graded for porosity and require no cloth backing support. They can be employed for liquids to 200 deg. F. They can be used also to handle flue gases that attack cotton or wool. Three grades, based on weight of 10 oz. per sq. yd., rate 200, 500 and 2,500 cc. per minute with filtration through an area 2 in. in diameter and a pressure head of 8 inches.

If you write maker identify as IEN - 6258

MOTOR . . Permanent magnet unit combined with planetary geared head

Source: GLOBE INDUSTRIES INC.
Box 101, Dept. IEN, Dayton 4, Ohio



Specified duty

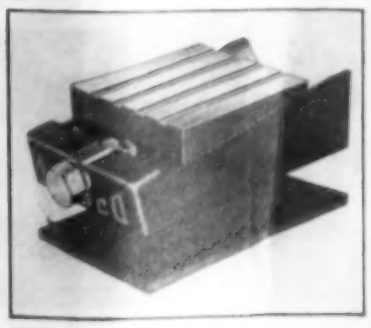
Rotary Actuator designates new combination of the company's permanent magnet miniature Moto-Mite motor and a planetary gear reduction. The assembly measures about 2 by 5 inches. It rates to 2,000 oz. in. of torque depending on the output speed. Operation is on 6 to 100 volts. The unit is available for specified speed, torque, angular rotation. Reversing relays can be added.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 6259

A PAID NEWS ADVERTISEMENT BY ENTERPRISE MACHINE PARTS CORP.

Improved Machine Leveling Jack is 50% stronger yet lower in height



Engineering improvements have made this Jack 50% stronger yet lower in height. This was accomplished by redesigning the Empco Jack so that the adjusting screw always remains cradled in the assembly. This insures full bearing of either front or back collar at any stage of operation.

Once the machine is set on Empco Jacks, the simple turning of adjusting screw with a hand wrench will lower or raise the machine until your level indicator reads "zero." With this feature, periodic machine leveling can be done in a matter of minutes.

To reduce vibration, Vi-Sorb Mounting Pads are available with each style Empco Jack. These pads substantially reduce vibration, the percentage of reduction usually depends upon the thickness of pad that is used.

Level machine installations with periodical re-leveling is essential to lower costs of machine maintenance. These costs are further reduced by the use of Vi-Sorb Mounting pads under Empco Leveling Jack.

Available in three styles: JC-1 (standard) and JC-2 (heavy duty) pictured here, and the newest style JS particularly designed for use with anchor bolts. Many models in all styles with minimum height ranging from 1⅞" to 4".

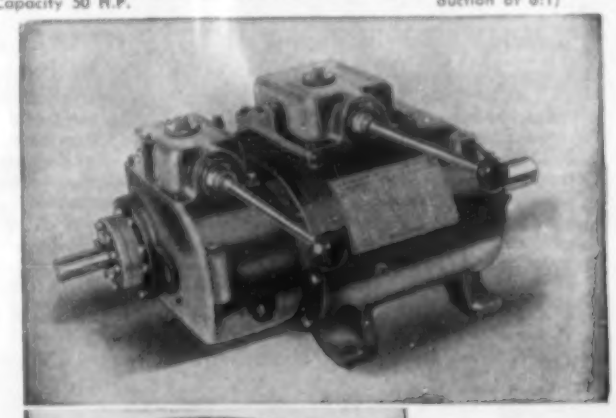
For complete specifications and prices write the Enterprise Machine Parts Corporation, 2737 Jerome Ave., Detroit 12, Michigan.

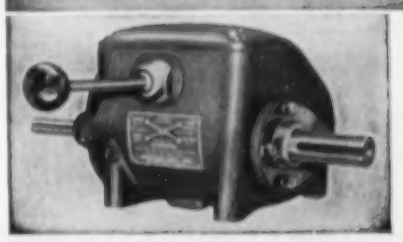
If you write maker identify as IEN - 6260

WESTERN "SUPER" *with* 8 SPEED CHANGES

For use on large lathes, boring mills, chemical and rubber machinery, etc., and used for replacement of gear boxes on large radial drills. Capacity 50 H.P.

in geometric progression of 1.29 (total reduction of 6:1)





(left) "900 B series" has a 5 hp. capacity with input speed of 900 r.p.m. . . . 4 gear changes are available through one-shift-lever automotive type.

Ratios — 1:1, 2:1, 3:1, 4:1.

On special machines where transmissions are required — a standard WESTERN model can often be adapted to give the required spindle speeds . . . and even when modifications are made, a WESTERN for the basis of the design greatly simplifies the problem. Similar transmissions of 10 hp. capacity are available . . . we can supply the necessary V-belts, sheaves, output pulleys, and motors from stock.

up to 100 h. p. For Motorizing Lathes, Milling Machines, Shapers, Turret Lathes, Radial Drills, Slotters, Belt Cutters, Gear Cutters, Die Sinkers, Boring Mills, etc.
WESTERN TRANSMISSIONS
WESTERN MANUFACTURING CO. 1456 DUNTON—DETROIT, MICHIGAN

If you write maker identify as IEN - 6261

FIRST 2,000 LB. GAS TRUCK WITH YALE FLUID COUPLING

in this capacity and overall length

Cost-cutting features no other 2,000, 3,000, 4,000 lb. Truck can match

EXCLUSIVE FLUID COUPLING provides cushioned drive to safeguard Truck and load.

GREATER VISIBILITY. Low cowl for excellent visibility, greater stacking accuracy, safer operation.

OPERATOR EFFICIENCY. Controls positioned for maximum efficiency and comfort.

PNEUMATIC OR SOLID TIRES available on all models.

MAXIMUM FREE LIFT with Simplex or Duplex lifting cylinder.

EASIER MAINTENANCE. One-piece, removable engine hood for easy access to entire engine.

MAIL COUPON for complete information on this new truck.

YALE*
INDUSTRIAL LIFT TRUCKS AND HOISTS

*Reg. U. S. Pat. Off.

MAIL THIS COUPON TODAY

The YALE & TOWNE Mfg. Co., Dept. 366
11000 Roosevelt Blvd., Philadelphia 15, Pa.

I would like to have additional facts about
☐ Yale Trucks. ☐ Yale Hoists.

Company_____
Name_____ Title_____
Street_____ City_____ State_____
In Canada write: The Yale & Towne Mfg. Company, St. Catharines, Ontario, Canada

Gas, Electric, Diesel & LP-Gas Industrial Trucks
Worksavers • Hand Trucks • Hand & Electric Hoists • Pul-Lifts

If you write maker identify as IEN - 6263

Rolling Steel Doors

Manually, Mechanically, or Power Operated

Below you see Mahon Power Operated Rolling Steel Doors installed in six truck openings to a motor freight loading dock. Another Mahon Power Operated Rolling Steel Door 17'-0" x 22'-0" is installed in a railroad opening in connection with this same loading dock. Rolling Steel Doors occupy no usable space either inside or outside the opening . . . they create no overhead obstructions—cranes may be employed to handle materials adjacent to the door opening. Quick opening, quick closing, vertical roll-up action saves valuable time . . . all-metal construction provides permanence, greater protection against intrusion and fire, and assures you a lifetime of trouble-free service. Write for Catalog containing complete information including Specifications.

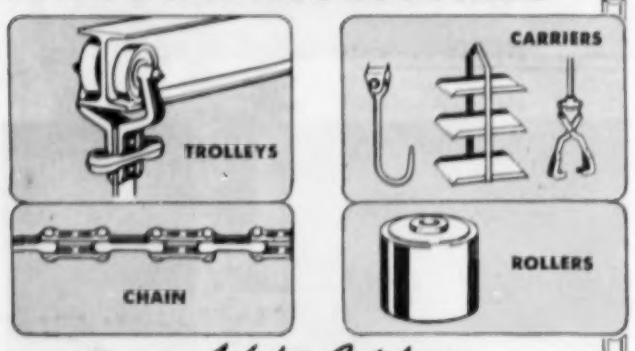
THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

If you write maker identify as IEN - 6264

WEBB

CONVEYOR EQUIPMENT, PARTS and ACCESSORIES



Ask for Catalogs

No. 50—Trolley Conveyors
No. 51—Floor Type Conveyors
No. 52—Power & Free Conveyors
No. 453—Hand Pushed Trolleys, etc.

JERVIS B. WEBB CO.
Conveyor Engineers and Manufacturers
8915 ALPINE AVE. • DETROIT 4, MICH.
OFFICES IN PRINCIPAL CITIES

If you write maker identify as IEN - 6265

HOW TO INSURE TOP METALWORKING PERFORMANCE for only $1.00

Send for a trial order of

CMD ANTI-SCORING LUBRICANTS

For top performance on lathe centers, grinding, press fit, stamping, die posts and many other operations—CMD ANTI-SCORING Lubricant can't be beat. It makes your operations smoother, faster, easier and of course more profitable. Prevents scoring, seizing, galling . . . all bugaboos in modern machining work. This trial order will start *you* on *your* way to top performance where a high pressure lubricant is needed. You will be surprised to find how long it lasts. Get yours today in both oil and grease consistencies.

TRIAL ORDER—TWO FOUR OZ. TUBES $1.00

Send me my order of CMD Lubricants right away! { Bill me / Bill my company }
Name _____
Company Name _____
Address _____
City _____ State _____

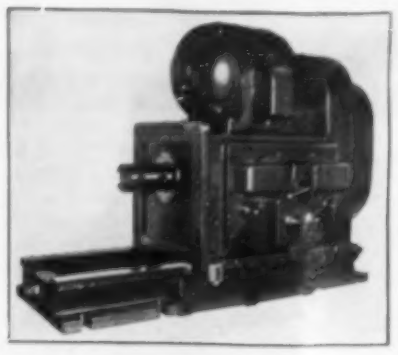
Chicago Manufacturing and Distributing Company
1904 West 46th St., Chicago 9, Illinois

CHICAGO MANUFACTURING & DISTRIBUTING CO.

If you write maker identify as IEN - 6266

DRILLING . . Motor driven head with hydraulic feed through 18 inches

Source: HOEFER MFG. COMPANY
213 S. Chicago Ave., Dept. IEN, Freeport, Ill.



Mounts at any angle

Single tools for drilling, reaming, boring, facing, milling, or multiple spindle heads, can be applied on this new motor driven hydraulic head. It is assembled on a base measuring 55 in. in length by 23¾ in. in width. It can be equipped with a 7½, 10 or 15-hp. motor operating at 900 rpm. for spindle speeds between 52 and 1,050 rpm. or at 1,200 rpm. for speeds from 70 to 1,400 rpm.

Speeds are selected by changing pick-off gears. One set of gears is supplied as standard equipment. The spindle center line is 18 in. above the bottom of the base and 12 in. above the ways.

Hydraulic pressure is provided by a removable Vickers panel. It can be slid out of the housing for inspection and adjustment. The hydraulic pump is driven by a universal joint and roller chain connecting directly to the spindle motor. Feed action is valve controlled and infinitely variable from a minimum of ¼ ipm. through fine and coarse ranges which are selected by separate control valves. Rapid traverse is at 240 inches. Operation is in a continuous cycle actuated by adjustable trip dogs for rapid approach, feed, rapid return and shutoff.

If you write maker identify as IEN - 6267

GENERATOR . . Makes acetylene gas for constant output at medium pressure

Source: LINDE AIR PRODUCTS CO.
30 E. 42nd St., Dept. IEN, New York 17, N. Y.

To 1,000 cfh.

Water changes, residue removal, carbide recharging, do not interfere with continuous delivery of acetylene gas from this new Oxweld MP-11 generator. It has an hourly rated output of 1,000 cubic feet. It will actually deliver 8,000 cu. ft. of acetylene at 13 lb. per sq. in. in an 8-hr. period. Automatic controls provide for continuous generation of the gas. The unit measures 60 in. in diameter. Overall height, including the charging hopper, is 14 feet. Dry weight is about 2,000 pounds.

The charging hopper attaches to the top of the main housing. It is pressure tight for air free carbide charging without interruption of the gas production. Water shuts off at the correct level to prevent over-filling. Feed stops if the water level is too low. The hydraulic back pressure valve prevents reverse gas flow from the service line. The equipment is listed under the Re-examination Service of Underwriters' Laboratories, Inc.

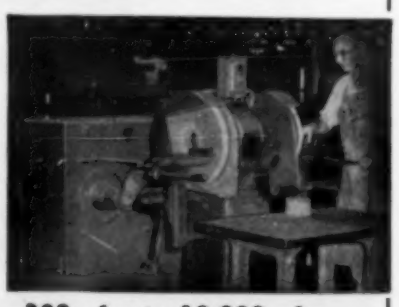
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6268

STOP DUST

INSTANTLY with DUSTKOP

DUSTKOP 1400 cfm.



DUSTKOP 3600 cfm.

300 cfm to 10,000 cfm per unit (22 models)

Standard pre-tested, available from stock. Ask for catalog 605-2. Describe dust problem for recommendation by return mail. No obligation.

AGET-DETROIT CO.
401 Main Street
ANN ARBOR, MICH.

If you write maker identify as IEN - 6269

CESCO *RIGHT . . . before your Eyes!*

Send TODAY for CESCO literature

CHICAGO EYE SHIELD COMPANY • 2326 Warren Boulevard, Chicago 12, Illinois

CESCO FOR SAFETY

OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Dallas, Detroit, East Orange, Houston, Indianapolis, Kansas City, Knoxville, Little Rock, Los Angeles, Louisville, Mexico City D.F., Milwaukee, Montreal, Peoria, Philadelphia, Pittsburgh, Salt Lake City, San Francisco, Spokane, St. Louis, St. Paul, Toledo, Tulsa, Wichita

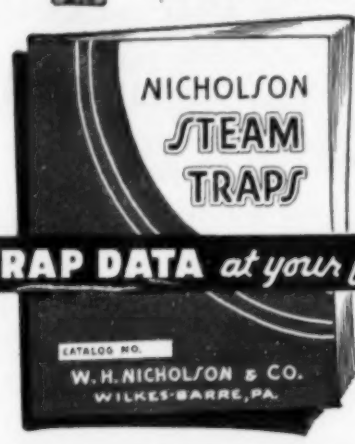
If you write maker identify as IEN - 6270

Send for Nicholson

Trap Catalog 953

A STANDARD REFERENCE ON TRAPS FOR ALL APPLICATIONS

Newly revised, this 32-page reference describes traps for all mediums and pressures: thermostatic and metal expansion for pressures to 250 lbs.; weight and piston-operated for heavy duty. Complete with installation diagrams and formulae for determining proper size trap.



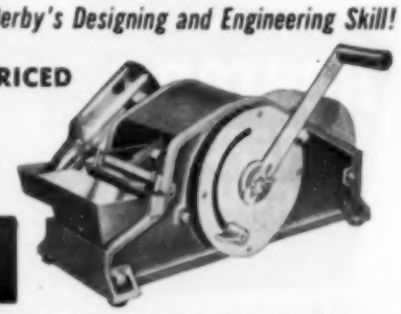
TRAP DATA *at your fingertips*

W. H. NICHOLSON & CO.
TRAPS · VALVES · FLOATS
159 Oregon St., Wilkes-Barre, Pa.

If you write maker identify as IEN - 6271

Another Triumph of Derby's Designing and Engineering Skill!

THE MEDIUM PRICED *Super* DERBY "152"



SENSATIONAL DISPENSER DELIVERS PREDETERMINED LENGTHS OF GUMMED TAPE UP TO 30", (1" TO 3" WIDE)

Priced far lower than any machine of comparable quality now on the market, the new Derby "152" has amazing versatility and durability. Its exclusive Derby "Moisture Control System" provides a completely moistened tape every time—and its unique brush design makes unnecessary the usual two brush arrangement. For industrial packaging, specify Derby "152".

A DERBY FIRST
Stainless steel cut-off blade, guaranteed for life of machine.

LOOK AT THESE QUALITY DERBY FEATURES

- Exclusive spring clutch feed
- Visible auxiliary water reservoir
- Adjustable, vari-length handle
- Larger interlocking side frame construction
- Measuring feed stop
- Automatic tape cut-off
- Visual measuring scale
- Water heater available at extra cost

See your dealer or write

DERBY SEALERS INC. Derby, Conn.

If you write maker identify as IEN - 6272

ECONOMICAL! DUNKING STATIONS

The safe economical solution to your plant smoking problem! Sipco Dunking Stations prevent fires. Cigarettes, cigars, matches, etc. immediately extinguished—no smoldering — no fire hazard! Built specifically for hard industrial use — and abuse — will last a lifetime.

Unit No. 1 — Heavy cast aluminum canister, attractive metal sign, upright and heavy weighted base for use on floors, aisles, etc.

Unit No. 2 — Same as Unit No. 1 except without upright and base. Easily mounted on walls, columns and posts.

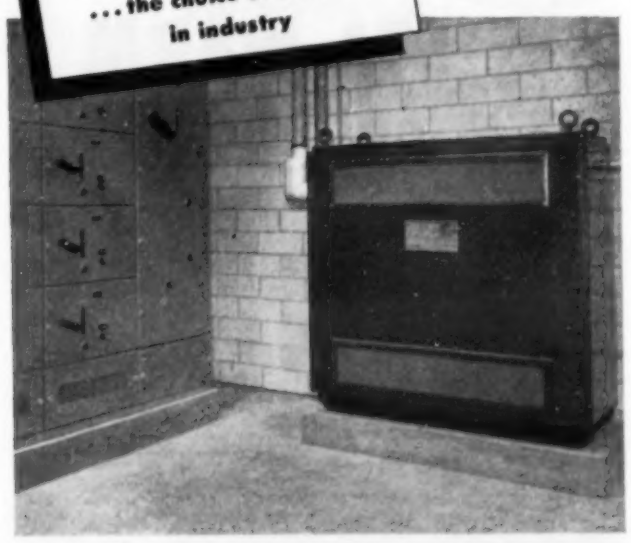
Unit No. 3 — Canister alone with mounting bracket.

Write now for Illustrated folder which gives complete details.

STANDARD INDUSTRIAL PRODUCTS CO.
Dept. N, 116 South Garfield Ave., Peoria, Ill.

If you write maker identify as IEN - 6273

Wagner®
TRANSFORMERS
...the choice of leaders in industry



Reduce costs of power distribution with Wagner Dry-Type Transformers

You can save money, save copper, and improve voltage regulation by bringing the right voltage to the load center with Wagner Dry-Type Transformers. They are safe to use—without fireproof vaults or other special protection—even where fire hazards are present. They provide steady voltage with minimum line losses. They are compact and light in weight—economical to install and easy to move when changes in plant facilities are necessary.

The transformer shown in the photograph above is one of 45 Wagner dry-type transformers, ranging in size from 5 through 150 kva, installed at Mrs. Baird's Bread Company, Dallas, Texas—the world's largest fully automatic bakery. All motors, lighting and equipment in the bakery are operated from the low voltage side of the Wagner Transformers that step down power delivered at 480 to 208Y/120 volts.

Wagner has a complete line of dry-type transformers that includes single-phase and three-phase units in ratings from 1 through 500 kva, single-phase and three-phase autotransformers, and unit substation transformers 112½ through 2000 kva.

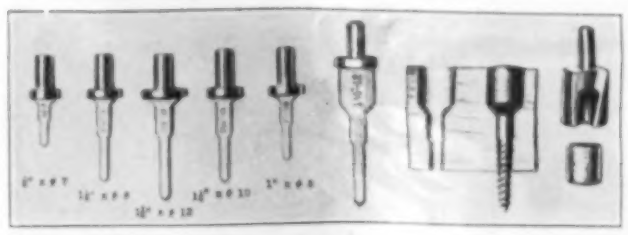
Your nearby Wagner engineer can help you select the *right* transformer for your needs. Just call the nearest of our 32 branch offices, or write us.

Wagner Electric Corporation EST. 1891
6414 PLYMOUTH AVENUE
ST. LOUIS 14, MO.
T54-2A
ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

If you write maker identify as IEN - 6275

WOOD WORKING . . Counterbore drill and cutter to set and cover screws

Source: EDW. L. SIBLEY MFG. COMPANY
222 Main St., Dept. IEN, Bennington, Vt.



33 sizes in overall line

Holes are drilled and counterbored to recess wood screws by application of a new combination tool the company has developed. This tool is employed in connection with a plug cutter to fill the hole back of the screw head after the screw has been turned down into position. The drill lists at $1.50. The plug cutter ranges from $2.25 to $2.75 in sizes from ⅜ by ⅜ in. to ⅝ by ⅝ inch. Both units are made of tool steel. Sizes range for screws from No. 7 to No. 12.

If you write maker identify as IEN - 6276

PIPE . . Flexible extruded plastic and plastic fittings, ½ to 3 inches

Source: WESTERN PLASTICS CORP.
3500 Ruston Way, Dept. IEN, Tacoma 2, Wash.

Specifications upon request

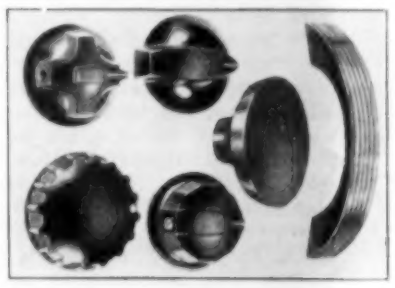
Panther 300 trade names a new flexible extruded polyethylene plastic pipe available from stock in ½ to 3-in. sizes and to order in sizes to 6 inches. Bursting pressure, at 75 deg. F., is 350 lb. for the ½-in. size, 140 lb. for the 3-in. size. Safe working pressure ranges from 88 to 35 pounds. Weight per foot is 0.1 to 0.89 pounds. The smaller sizes are shipped in coils. The 3-in. size is in 25-ft. straight lengths.

The plastic is non-toxic, corrosion resistant and rot proof. It is chemically inert and practically unbreakable. It maintains flexibility between minus 60 and plus 115 deg. F.

If you write maker identify as IEN - 6277

CONTROL . . Plastic knobs and handles available from stock molds

Source: SYNTHETIC PRODUCTS CO.
1405 16th St., Dept. IEN, Racine, Wis.



Typical units

Control knobs and handles, made of plastic in a range of colors, are available from stock molds in a new setup the company has made to eliminate tool costs. Special markings, graduations, designs can be branded on the parts at a lower price than would be required for mold engraving. Examples are illustrated.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6278

NEW PIONEER Stanflex

Plastic-Coated WORK GLOVES
With Custom-Fit
Single-Seam Jersey Lining

PIONEER'S exclusive two-piece, single-seam lining (Pat. pend.) provides over 47 square inches of seam-free work surface. No seams on face of fingers, thumb, palm or back to chafe hands, wear out first. Elastic-knit jersey shapes to hand.

Wing-style thumb, curved fingers fit hand naturally, complete action freedom. Satin finish gives positive over-all grip.

Tough bonded vinyl coating has amazing resistance to cuts, snags, abrasion—outwears leather. Watertight, resists oils, acids, caustics, most chemicals.

Available in 12" gauntlet, 10" band top and knit wrist styles. Try them once—you'll make them your standard.

Bet You 6 Pairs . . .
Send us your order for 6 pairs any style Stanflex Gloves. They will outwear any plastic-coated gloves you are now using, or simply return form enclosed for full refund. Order now . . . offer expires in 30 days.

The PIONEER Rubber Co. 235 Tiffin Road Willard, Ohio

Quality Gloves for 35 Years

If you write maker identify as IEN - 6279

feature for feature...
THIS NEW SQUARE D VOLTAGE TESTER
Tops them ALL!

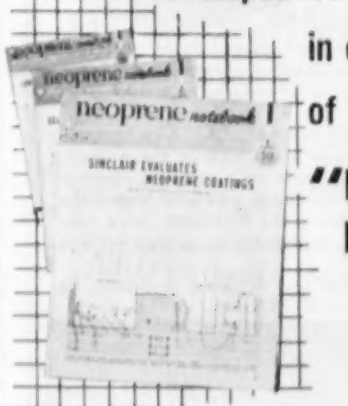
for further details, write Square D Company, 6060 Rivard Street, Detroit 11, Michigan
ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN - 6280

NEW DESIGN IDEAS

for using neoprene,
Du Pont's chemical rubber,
are suggested by reports
on how new products are
developed . . . old ones improved . . .
in every issue
of the free



"NEOPRENE NOTEBOOK"

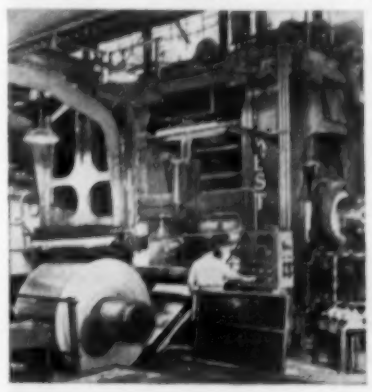
Mail the reader service card to get on the mailing list

DU PONT
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

NEOPRENE

The rubber made by Du Pont since 1932

If you write maker identify as IEN - 6281



Okonite cable keeps this operation on schedule

THIS 77-inch temper mill at Jones & Laughlin's Cleveland plant produces 40 tons of steel per hour. Operating schedules call for 20 turns a week of eight hours each—and the schedule is kept. Jones & Laughlin relies on Okolite-Okoprene wires and cables.

Wherever specifications require long-term reliability and trouble-free service, that is where cost-wise planners require Okolite-Okoprene. Okoprene will not rot or deteriorate under the most severe conditions, and the 30-year reputation of Okolite insulation has no equal for dependable service.

Write for Bulletin IE-1056 to The Okonite Company, Passaic, N. J., for full information on Okolite-Okoprene control cables.

2328

OKONITE *insulated cables*

If you write maker identify as IEN - 6282

A Motor for LOW SPEED OPERATION

If you are now manufacturing a product or developing a product where you need motion at slow speed, here is the motor for you. Hundreds of thousands now in use on cooking appliances, vending, coin operated, amusement, and advertising displays.

These AC gear motors are precision built and are being manufactured in volume for immediate delivery. For further information, send the requirements of your application to us. Special motors are built to meet your new product needs. Write today for data sheet.

MotoRESEARCH COMPANY
1600 JUNCTION AVENUE
RACINE, WISCONSIN

Designers and Manufacturers of
SPECIAL INDUCTION MOTORS

If you write maker identify as IEN - 6283

NOW... A POLISHER THAT'S UNIVERSALLY ADJUSTABLE

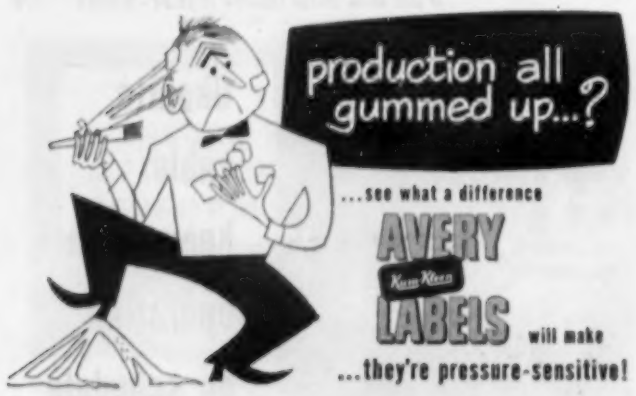
Built for use with the Vonnegut Brush-Backed Polishing Head, this unique tool is designed for sanding, smoothing or finishing contoured patterns — such as mouldings and formed or extruded shapes.

The brush bristles of the head automatically force abrasive strips to conform with and follow the shape of the pattern. The unique spindle stand (adjustable to any angle through 180° from vertical to vertical with head below or above the motor) makes it possible to bring the Vonnegut head into proper relation with a vertical, horizontal or angled surface of any pattern.

Don't hold back. Tell us about your finishing problems; we MAY have the answer to cutting YOUR costs.

Grinding and Polishing Machinery Corp.
SUCCESSORS TO VONNEGUT MOULDER CORPORATION
2530-D WINTHROP AVE., INDIANAPOLIS 5, IND., U. S. A.

If you write maker identify as IEN - 6284



■ Self-adhesive Avery Labels are quick, clean and neat... there's no mess, no fuss, no sticky fingers. Combined with patented Avery dispensers, they'll speed and simplify your labeling—and production! They're laid right on your product —*without moistening*. They'll put your trade mark on that hard-to-label surface...put a warning sticker or wiring diagram on your product or any clean, smooth spot. For inspection stickers...color coding...guarantees—they'll really speed production, packaging or any labeling or marking job!

■ Available in sheets or rolls...in any size, shape or color. Write for case histories and FREE SAMPLES—*today!*

AVERY ADHESIVE LABEL CORP., custom div. 103
117 Liberty Street, New York 6 • 608 South Dearborn Street, Chicago 5
1616 S. California Ave., Monrovia, Calif. • Offices in other Principal Cities

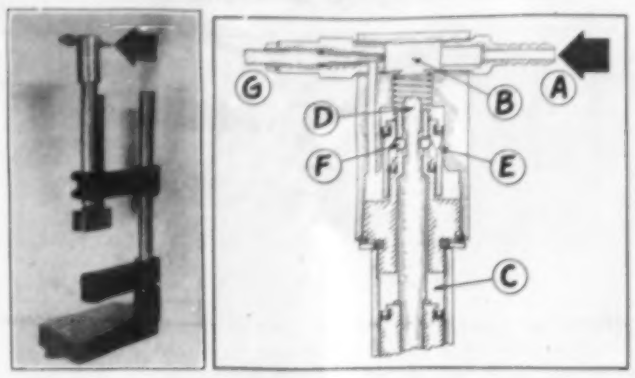
☐ Send us case histories & free samples
☐ Tell us about your dispensers
☐ Have the Avery Label man call

Name
Company
Address
City State

If you write maker identify as IEN - 6285

HAMMER . . Pneumatic impact unit rates to 7½ ton on 100 lb. air

Source: MEAD SPECIALTIES CO.
4114 N. Knox Ave., Dept. IEN, Chicago 41, Ill.



Patent pending

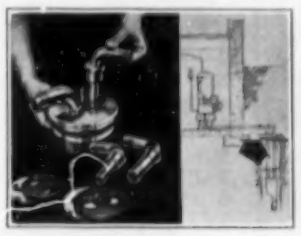
Air line pressure and an adjustable needle valve are employed to control the new air operated latch mechanism in the company's line of pneumatic hammers, previously described IEN-4912-49. The hammers are available in a number of sizes, the largest rating 7½ ton on 100-lb. air. This particular unit mounts on a bench and is equipped with a 7 by 9-in. work table. It provides 4½ in. of throat depth and 18 in. maximum between the ram and the table. Stroke is maximum at 8 inches. The hammer is suited for riveting, punching, staking, stamping. Force of the blow can be adjusted, while the hammer is in operation, by turning the stem of the needle valve in the head assembly.

Air pressure, controlled by a suitable valve, enters through the connection A to fill the upper chamber B and to move down through passages in the assembly to the chamber C above the main piston. Pressure in B applies on the upper end of the piston rod and also on top of the spring backed gasket sealed taper control collar E. This collar is held downward to press the four locking balls F inward.

The balls engage the shoulder in the piston rod so it cannot move down until air pressure, slowly passing through the port controlled by the needle valve G, builds up beneath the collar. This build up finally reaches a point where the collar is moved upward to release the locking balls and air pressure in B and C combine to force the piston downward so the hammer strikes its blow. Force of the blow is in direct proportion to the speed with which releasing air is admitted through the needle valve port. Upward return of the piston, where it relatches, is by spring action, not shown in the section view.

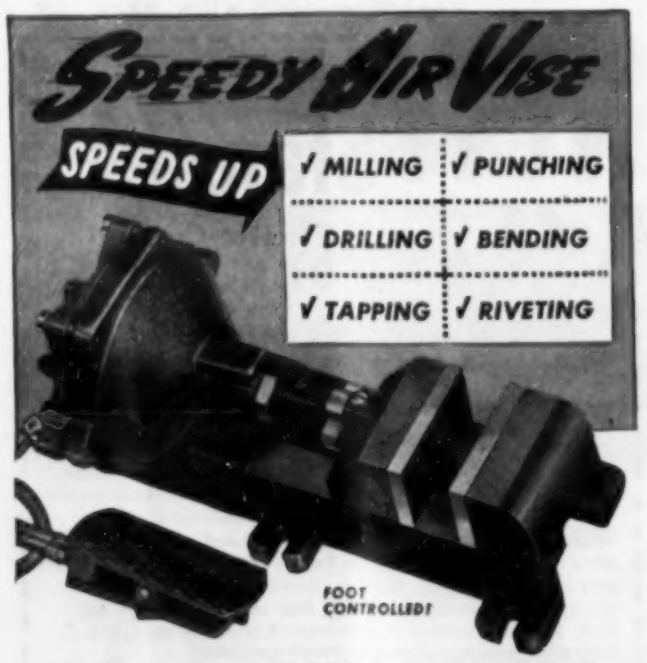
If you write maker identify as IEN - 6286

The top of a 4, 5 or 6-in. well casing can be sealed quickly with this new assembly of top cap, bottom compression plate and ½-in. neoprene washer. Pipe connections lead through the assembly. The neoprene is compressed around the fittings and against the casing, when the bolts are turned down, to make a water tight connection. Interchangeable fittings permit making up any seal and elbow combination from 4 by 1 by ¾ in. to 6 by 1½ by 1¼ inches. The manufacturer of the new seal assembly is Adapto-Seal Div., 205 W. Wacker Drive, Dept. IEN, Chicago 6, Ill.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6287



GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

Speedy Air Vise helps you do dozens of operations faster, better, cheaper—by air pressure! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce *more!* Jaw opens up to 3 inches, holds castings, parts, jigs, etc. Compact and trouble-free.

Complete with Foot Control, Air Hose and Fittings.....only $36.00

Prompt Delivery from Your Supplier or Write Direct

W. R. BROWN CORPORATION • 2645 N. Normandy Avenue, Chicago 35, Ill.

AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

If you write maker identify as IEN - 6288

FREE BULLETIN

Shows how to
★ Save time
★ Save floor space
★ Reduce handling costs

WITH

NUTTING JACKS and SKIDS

On-the-job photos in Bulletin 48-JS demonstrate the many advantages of the Nutting Jack and Skid System. It is easy and inexpensive to install—and is so flexible to varying plant layouts that there is scarcely a materials handling problem to which it cannot be profitably applied.

Representatives in principal cities—Look under "Trucks" or "Casters" in classified phone directory—

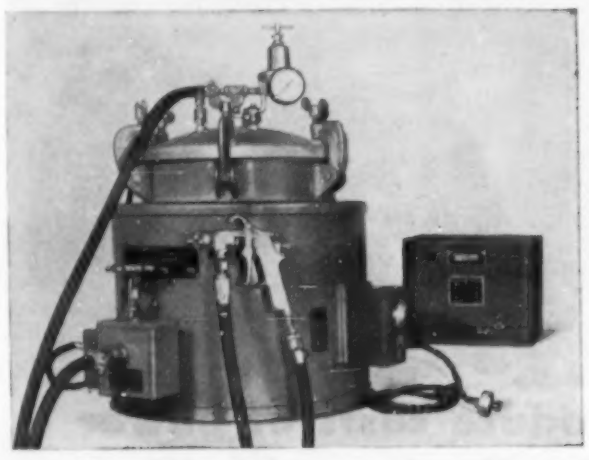
Or SEND NOW FOR BULLETIN 48-JS

SINCE 1891 Nutting TRUCK AND CASTER CO.
2015 DIVISION ST., FARIBAULT, MINN.

Export Sales: School International, Inc., 4237 North Lincoln Ave., Chicago 18, Ill.

If you write maker identify as IEN - 6289

SPRAY MELTED WAX with this STA-WARM equipment



Now you can successfully spray hot wax in a thin layer or coating over metal, wood, fibre or any surface to which wax normally adheres.

This is the new Sta-Warm development that has excited the interest of production and plant engineers. Its applications are numerous in a wide variety of industries.

Basic equipment, which can be tailored to your requirements, includes an electrically heated pressure tank of 2 to 100 gal. capacity for melting and storing, electrically heated flexible hose and gun assembly adapted to specific operations, plus power-pak with selective control of temperatures as required for heating the hose and spray gun.

If you are now dipping or pouring melted wax on your production line, you, too, may find that *spraying* provides material and operating economies worth investigating.

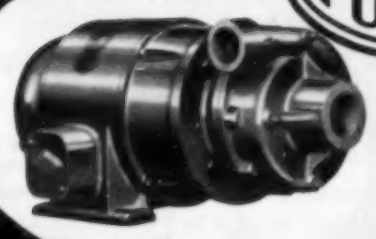
Inquire Today —outlining your current problem.

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

If you write maker identify as **IEN - 6291**

FACE-MOUNT, CLOSE-COUPLED & FLEXIBLE-COUPLED WATER TRANSFER PUMPS

PEERLESS PUMPS



America's MOST COMPLETE LINE AVAILABLE IN TYPES, MODELS AND SIZES from ¾ to 150 hp—for capacities from 10 to 5500 gpm—for heads up to 260 ft.

For all water transfer services. Sizes up to 5 hp equipped with mechanical shaft seals. All sizes are bronze fitted. Economical to maintain and operate. Highly efficient in performance.

DESCRIPTIVE 24 PAGE BULLETIN No. B-2300 is complete with illustrations and pump selection charts.

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION
301 West Avenue 26, Los Angeles 31, Calif. • New York; Indianapolis; Chicago; St. Louis; Atlanta; Dallas; Phoenix; Los Angeles, Fresno, Calif.

If you write maker identify as **IEN - 6292**

Which Do You Choose

SAFETY *or* RISK?

Compare the Advantages of Modern Scaffolds Over Block and Tackle!

GOLD MEDAL MIDGET Safety Swinging Scaffolds

- ✓ Light, compact, easy to rig.
- ✓ ¼" *steel* wire rope, wound on drum, eliminates dangerous hitches.
- ✓ Machine positively locked three ways to prevent slipping or running down. Stirrup *bolted* to operating mechanism.
- ✓ One man can carry a Midget Machine.
- ✓ A Midget offers built-in safety in every way.

Scaffold Falls, 2 Hurt in Plunge

Two cement finishers were seriously injured Tuesday when a scaffold collapsed, tumbling them 25 feet to the street.

The accident occurred when the buckle on a block and tackle slipped as the men worked on a three-story garage at [illegible]

BLOCK AND TACKLE Scaffolds

- ✗ Heavy, bulky.
- ✗ Bulky coils of rope tangle easily. Manila rope subject to rapid deterioration.
- ✗ Tying and untying hitches is always dangerous. Cradle iron not securely fastened to tackle.
- ✗ Large bulky coils of rope require constant inspection, as well as extra handling and storage space.
- ✗ Danger is always present in this type equipment.

LADDERS AND SCAFFOLDS FOR ANY PURPOSE
. . . Any Place . . . Any Time

GOLD MEDAL LADDERS SCAFFOLDING ®

for Greater Safety...Efficiency...Economy

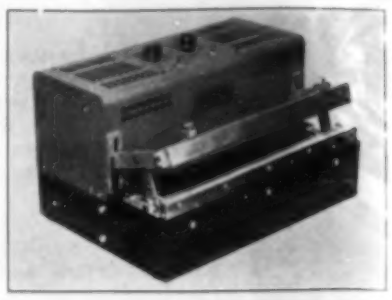
THE PATENT SCAFFOLDING CO., Inc.

38-21 - 12th Street, Dept. IEN, Long Island City 1, N. Y.
West Coast Plant: 6931 Stanford Ave., Los Angeles, Calif.
Branches in all Principal Cities

If you write maker identify as **IEN - 6294**

PACKAGING . . Heat sealing machine delivers fractional second heat pulse

Source: VERTROD CORPORATION
17 Williams Ave., Dept. IEN, Brooklyn 7, N. Y.



Patented design

Model 15B is a new bench type heat sealing machine measuring 17 in. in width to produce a 15-in. seal length. It is operated magnetically with actuation by foot, knee or finger operated switch. The action is accompanied by force just sufficient to bring the heater bars toward each other. They will not crush a finger caught between them or burn the finger since there is no heat until final pressure contact has been set up.

Jaw pressure is concentrated into the last quarter inch of movement. Then the heat pulse is electronically timed to require a fraction of a second. As a result, the heater bars do not remain hot when the jaws are open. Operation is on 110-volt ac. with input at 1,500 watts. Weight is 50 pounds.

If you write maker identify as **IEN - 6295**

PLASTIC . . Laminated sheet to construct acid resistant equipment

Source: SEIBERLING RUBBER CO.
41 Barberton St., Dept. IEN, Akron 9, Ohio

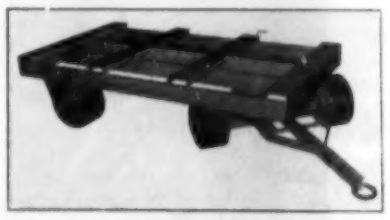
Technical data upon request

The company announces start of production of its new polyvinyl chloride laminated sheet in sizes to 4 by 8 ft. and in a range of thicknesses. The new material can be sawed, shaped, sanded, drilled, stamped, turned, with hand or power operated wood and metal working tools. It can be welded by a "hot gas" process. Typical applications include lining acid and chemical tanks, construction of acid ducts, vents, trays.

If you write maker identify as **IEN - 6296**

TRUCK . . Four wheel trailer handles a 10 ton load of baled scrap

Source: OHIO GALVANIZING & MFG. CO.
Dept. IEN, Niles, Ohio



Built to order

The platform of this new truck measures 50 by 90 inches. It stands 23 in. above the floor and is equipped with cross channels to prevent movement of loaded bales of scrap. Wheels are furnished with 15 by 9 by 11¼ in. pressed-on rubber tires. The wheels are mounted on Hyatt roller bearings. The truck is of fifth wheel construction with a safety tongue. Any size of platform can be supplied to specification for a particular use.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6297**

McDonald

DUSTFOE Airline RESPIRATOR

Approved for protection over prolonged periods against harmful or objectionable atmospheres containing welding or cutting fumes, paint spray vapors, fumes from burning metals and toxic dust.

Dustfoe facepiece cushion provides a comfortable gas-tight fit with a minimum of adjustment—can be worn under welding helmet.

Small, compact, lightweight. Does not impair vision. Non-kinking air hose—air flow control valve easily adjusted for proper flow to wearer.

Write for Bulletin and Prices

Safety Room Gear is Foot

B·F·McDonald COMPANY
Manufacturers & Distributors of Industrial Safety Clothing & Equipment

5721 West 96th Street, Los Angeles 45 • Other offices in San Francisco and Houston

If you write maker identify as **IEN - 6298**

INDUSTRIAL INKS To Mark Anything!

Whatever the substance, Phillips has an ink to mark it permanently and legibly—or can make one. Marking experts insist on "Clear Print" Wood Block Stamp Pads and Opaque Inks. They get clear, sharp, fast-drying impressions. Also inks for brush, pen, stencil or machine application available in a variety of colors and quantity containers.

★ Quick Laboratory Service On Your Problem Markings

★ To Permanently Mark . . . Metals, Plastics, Glass, Wood, Paper, Leather, Ceramics—glazed, varnished or lacquered surfaces and virtually every other known material.

L. A. PHILLIPS, President
PHILLIPS PROCESS CO. INC.
192 MILL STREET
ROCHESTER 14, N. Y.

If you write maker identify as **IEN - 6299**

Now!* An Interrupting rating in excess of 100,000 amperes *for every set of fuse clips

. . . simply by installing

FUSETRON *dual-element* FUSES

After years of development work, recent tests verified by the Electrical Testing Laboratories of New York indicate that an interrupting rating of 100,000 ampere for FUSETRON fuses is a conservative one.

On circuits set to deliver in excess of 100,000 ampere, 30 to 600 ampere, 250 and 600 volt FUSETRON fuses on every test cleared the circuit without belching flame or venting hot gases and with comparatively little noise.

No Interference with Time-Lag

Remarkable results have been achieved. Interrupting capacity has been greatly increased while the time-lag characteristics of FUSETRON fuses has in no way been disturbed.

You get ALL THIS ADDED SAFETY without changing a panelboard or switch . . . PLUS the 10 Point Protection of FUSETRON dual-element FUSES.

For safe protection on loads above 600 and up to 5,000 ampere install BUSS Hi-Cap FUSES.

These fuses have unlimited interrupting capacity on circuits of 600 volts or less. Designed to give protection against dangerous overloads as well as excessively high fault current — yet their high speed operation on heavy shorts limits currents to safe values. When coordinated properly with FUSETRON fuses they will not open ahead of the fuse nearest to the fault.

ACTION THAT SAVES YOU MONEY

Delay may cost you far more in losses than replacing every fuse with a FUSETRON dual-element fuse on loads up to 600 amperes — and BUSS Hi-Cap Fuses on loads above that.

For blowing time charts and more information on FUSETRON dual-element Fuses and BUSS Hi-Cap Fuses write for Bulletins FIS and HCS.

BUSSMANN MFG. CO. *(Div. McGraw Electric Co.)*
University at Jefferson St. Louis 7, Mo.

If you write maker identify as IEN - 6301

Here's why it pays to use LINK-BELT "RC" Flexible Couplings

Equalized load / Proper balance at high speeds / Effective compensation for end float and misalignment

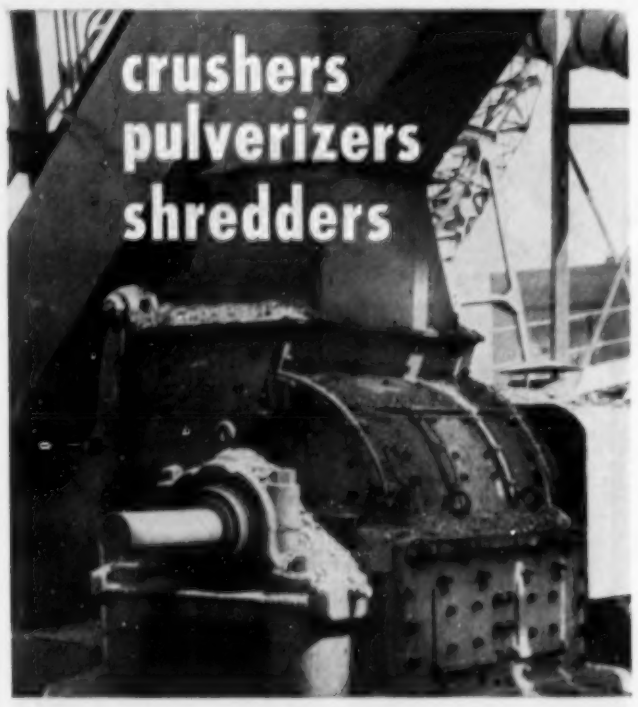
Yes, two big engineering features—single chain simplicity and divided rollers—combine to assure top performance, economical power transmission. And that's why you get the three big operating advantages listed above with Link-Belt RC Flexible Couplings. Find out how you can use these efficient couplings to provide positive flexible shaft connection . . . from fractional to 1000 hp. Ask your nearest Link-Belt office or distributor, or write for Folder 2363.

LINK-BELT

"RC" FLEXIBLE COUPLINGS 19,192

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (South Africa), Sydney (Australia). Sales Offices, Factory Branch Stores and Distributors in Principal Cities.

If you write maker identify as IEN - 6302



THE JEFFREY MANUFACTURING CO.
Columbus 16, Ohio

IF IT'S MINED, PROCESSED OR MOVED . . . IT'S A JOB FOR JEFFREY!

sales offices and distributors in principal cities

If you write maker identify as IEN - 6303

DISCOVER

how AIR POWER can speed your production jobs

Find out how Air Power delivered by Ingersoll-Rand Type 30 Compressors, can save time, money and man-hours in your operations. Here are facts and figures every man responsible for production should have. Also, the reasons why Type 30 Compressors give you a *greater* volume of compressed air per hp input.

782-3

CLIP AND MAIL, NOW

INGERSOLL-RAND CO., 11 Broadway, New York 4, N. Y.
Please send me, at no obligation, Booklet 1502-D on the complete line of I-R Compressors.

NAME_____ TITLE_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE____ STATE_____
(Please Print)

If you write maker identify as IEN - 6304

HANDLING . . Power shovel for bulk materials and general utility

Source: JAEGER MACHINE CO.
550 W. Spring St., Dept. IEN, Columbus 16, Ohio

"Load-Plus Auto-Scoop"

Scoop Loader designates this new hydraulically actuated 12 cu. ft. shovel. It has been developed to unload box cars, load from stock piles, charge hoppers and conveyors, handle barrels, drums and small loose parts, move coal and ashes and perform general duties such as yard maintenance, snow removal, towing.

The machine has lifting capacity to 1,200 pounds. It turns in a 6½-ft. radius, has a 4½-ft. vertical dumping clearance and a reach of 31 inches. Rear wheel steering, constant mesh transmission, separate directional shift lever for changes of speed and travel in either direction and a bucket that extends to the width of the tires to work flush against walls are all part of the standard construction. The load is centered on the front drive wheels. It is counter balanced by the engine and the radiator grill at the rear. Power is supplied by a 33-hp. gasoline engine operating at 1,800 rpm.

The boom arms are designed to crowd the bucket forward as it rises. At the same time, two double acting bucket control pistons tilt the bucket back to level position to retain its load. The low bucket level position assists in carrying and enables the operator to crowd into material at ground level. Rate of dumping is controllable. Shaking action can be imparted to clear sticky materials.

If you write maker identify as IEN - 6305

CONVEYING . . Power belt section gains elevation for gravity roller line

Source: LAMSON CORPORATION
303-5 Lamson St., Dept. IEN, Syracuse 1, N. Y.

Three ply belt, 18 and 30 in. widths

Unit Booster is a new motor driven belt section made up of a 5-ft. drive and a 5-ft. take-up. Five or 10 ft. intermediate sections can be added for maximum length of 60 feet. A motor drives the conveyor belt mounted on rollers that support it above the sides of the frame to handle overhanging loads. A standard gear head motor, rating ⅓ to 1 hp., is employed. The section can be set for inclines to 30 degrees. Accessory equipment includes a tail belt connection to the power drive and floor or ceiling supports.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6306

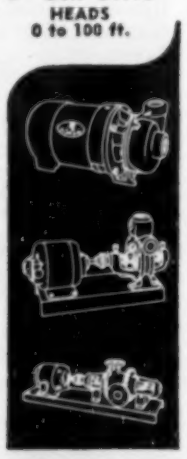
Small Capacity • Medium Duty SIDE SUCTION PUMPS

Close-Coupled • **Flexible Coupling** • **Belt Drive**

CAPS 5 to 75 G.P.M. — HEADS 0 to 100 ft.

Ideal as part of Equipment Manufacturer's product, such as, air conditioning units, cooling towers, evaporator coolers, milk coolers, hot water circulators, etc.—and general service. Speeds 1750 to 3500 R.P.M.

Type JMC Aurora Close-Coupled Pump



DISTRIBUTORS IN PRINCIPAL CITIES

AURORA Always PUMPS — **AURORA PUMP COMPANY**

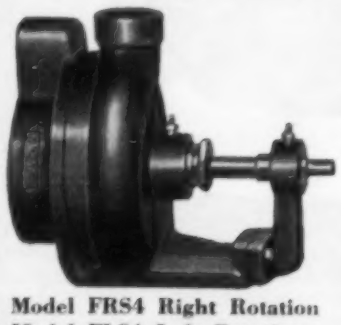
DIVISION OF THE NEW YORK AIR BRAKE COMPANY
52 Loucks Street • Aurora, Illinois

If you write maker identify as IEN - 6307

FULFLO CENTRIFUGAL **COOLANT PUMPS**

Precision-designed and engineered to do ONE THING and DO IT BEST:

KEEP TOOLS COOL
MAKE THEM WORK BETTER, LAST LONGER



For the machine tool and other industries, FULFLO COOLANT PUMPS play an inestimable part.

Direct, motor or belt driven. Vertical or horizontal installation. Capacities from ¼ HP to 1 HP; pipe sizes from ⅜" to 1½".

Model FRS4 Right Rotation
Model FLS4 Left Rotation

WRITE FOR PERSONAL COPY—on your letterhead—of FULFLO MECHANICAL DATA BOOK. Please state if for Pumps, for Valves or for both.

FULFLO THE FULFLO SPECIALTIES CO. Inc.
PUMP AND VALVE MANUFACTURERS
BLANCHESTER, OHIO

If you write maker identify as IEN - 6308

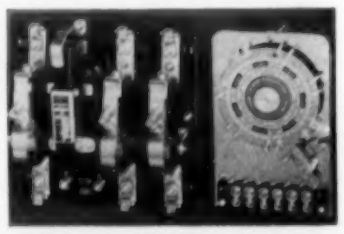
LUMENITE MAGNETIC SWITCHES

For Heavy Electrical Loads Operated by Lumenite Time Switches, Liquid Level Controls, Interval Timers, Electronic Timers, Electronic Switches, or other controls.

To meet the demand for better, more dependable, longer life and trouble-free operation, Lumenite offers a complete line of *Magnetic Switches—Transfer Switches* and *Reversing Switches.* Heavy electrical loads such as pumps, flashing signs, flood light or area lighting systems, emergency power loads, laundry or industrial machines are safely handled by these improved switches. All types—all capacities.

Most advanced construction assures long life of heavy duty service with little or no attention.

SPECIAL — If you have an unusual operation or power control, write us your requirements.

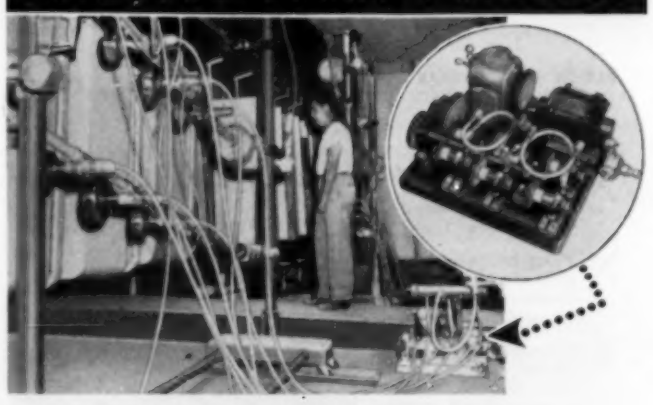


Write for Bulletin M S-451

Lumenite Electronic Co.
407 S. Dearborn St., Chicago 5, Ill.

If you write maker identify as IEN - 6309

VIKING PUMPS SELECTED FOR EXACTING RANSBURG ELECTRO-SPRAY PROCESS



Unit with cover removed showing 6 Viking Pumps, one each for delivering paint to each atomizer.

The Problem: In order to spray electrically charged particles without over-spray, the Ransburg Process demands accurate fluid delivery over very long periods of continuous pumping.

The Answer: Viking Pumps were designed to meet Ransburg's requirements of very accurate and smooth delivery at varying and extremely slow speeds.

Have you an exacting pumping job? Then send for free bulletin 1803F.

VIKING — AN HONORED NAME IN PUMPING

See Our Catalog in SWEETS

VIKING PUMP COMPANY
CEDAR FALLS, IOWA

If you write maker identify as IEN - 6310

REALOCK FENCE

saves you money

- . . . Saves cost of extra guard personnel
- . . . Cuts cost of ground maintenance
- . . . Cuts down pilferage losses
- . . . Makes possible lower insurance rates
- . . . Guards against loss from burglary and vandalism.

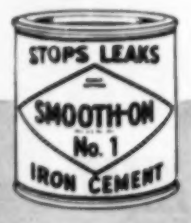
Consult your classified telephone directory for nearest sales office or write to any of our three division offices for free estimate or catalogue.

THE COLORADO FUEL AND IRON CORPORATION—Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION—Buffalo

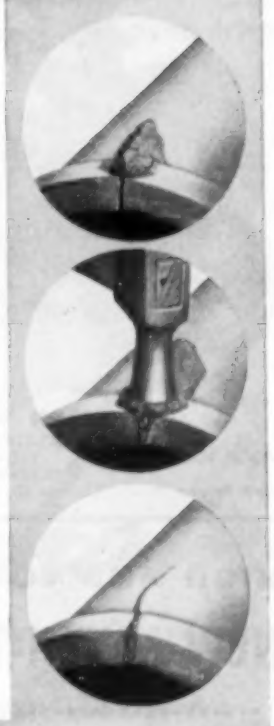
REALOCK FENCE
THE COLORADO FUEL AND IRON CORPORATION
BRANCHES IN ALL KEY CITIES
CF&I

2013

If you write maker identify as IEN - 6311



How to use SMOOTH-ON Iron Repair Cement



Once you see *how* Smooth-On works you get an idea of the many repairs it can make! Smooth-On No. 1 is a powder you mix with water to a putty-like consistency. You force it into cracks or other openings. All Smooth-On ever asks is something firm to expand against. Once in place it holds tight against steam, water, fire, air or gas, and holds under pressure or vacuum. It will not soften or deteriorate through age—at least it hasn't *yet!* We have samples on display which were made up in 1895. They are as sound as ever. Keep Smooth-On No. 1, quick-setting, or No. 2, slower setting, handy.

TYPICAL USES:

- Making tight joints and seams
- Filling voids in machinery or pipe lines
- Assembling parts
- Tightening loose screws, bolts, parts, handles, etc.
- Repairing worn or corroded metal areas
- Stopping leaks in boilers, pipe lines, pressure containers, etc.
- Making all kinds of emergency repairs

FREE REPAIR HANDBOOK

A new, revised 48-page edition, explains in detail how to make dozens of typical repairs which save both time and money in factory, garage, power plant, and home. Ask your supply house for a copy or write us. 50412

SMOOTH-ON MANUFACTURING COMPANY
Dept. 1, 572 Communipaw Avenue, Jersey City 4, N. J.

SMOOTH-ON

If you write maker identify as IEN - 6313

GAGE . . Bench centers designed to inspect cylindrical work

Source: BROWN & SHARPE MFG. CO.
235 Promenade St., Dept. IEN, Providence 1, R. I.

Note raising blocks

Work to 8 in. in diameter and to 36 in. in length can be set up on the headstock and foot stock center heads in this new design of the company's Bench Centers. The two heads are mounted on a ribbed base with three-point bearing. Each head is adjustable individually and can be locked at any position on the bed. The spring actuated center can be locked when supporting heavy work.

The dial gage, regularly supplied, reads by half-thousandths. Gages reading by ten-thousandths can be substituted on special order. Raising blocks, 4 in. in height, are available to increase capacity for work to 16 in. in diameter. Centers can be lapped to the work and an electronic testing device applied to measure in very fine increments.

If you write maker identify as IEN - 6314

PAINTING . . Vinyl primer for application on clean metal surface

Source: THOMPSON & COMPANY
1085 Allegheny Ave., Dept. IEN, Oakmont, Pa.

For production or maintenance

Protection against corrosion is combined with a primer film to take a top coat of paint in this recently improved Type AS-4 priming liquid. Application is by spray, brush or dip, followed by baking or air drying, on any type of clean ferrous or non-ferrous metal. The liquid, as supplied, does not require an activator but it must be thinned prior to use. A brush coating will air dry in 35 min. or force dry in a little over 2 min. at 180 deg. F. The liquid is known as Vinsynite Type AS-4.

If you write maker identify as IEN - 6315

HEATING . . Propane gas torch for soldering and general utility uses

Source: VELOCITY-POWER TOOL CO.
201 N. Braddock Ave., Dept. IEN, Pittsburgh 8, Pa.

Supplies local heat

Trigger control characterizes the action of this new Type P unit in the company's Torch-O-Matic line. The flame lights instantly, upon depressing the trigger. It snaps out as soon as the trigger is released. Connection is made through a hose to a tank of propane gas. The torch supplements the acetylene unit, previously described IEN-9999-52, in which a spring-loaded trigger opens the gas valve and also sparks an ignition flint to light the gas.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6316

If you write maker identify as IEN - 6317

For faster, lower cost assembly . . .

You'll get big savings on assembly operations with Stackbin Assembly Bins. Work station layouts are more efficient. Parts are kept close to worker's hands . . . reaching and fumbling is eliminated. Shallow angle lip is just right for finger tip control. Operators can select with both hands. Sloping bottom feeds parts continually toward the front. With adjustable hoppers, there are always plenty of parts when and where they're needed.

Stacking feature permits rigid setups, allows flexibility when layout is changed.

Stackbin Assembly Bins feature all-welded construction with smooth, folded edges. 6 sizes with straight or tapered sides. Also available with rear-loading feature.

WRITE TODAY for full information on the Stackbin System of economical materials handling and storage.

Stackbin Corporation, 1077 Main Street, Pawtucket, R. I.

Mfgd. and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa

STACKBIN SYSTEM
"Stacked and Still Accessible"

If you write maker identify as IEN - 6318

FREE air compressor fact folders

Get the low-down on air compressors — ask today for these new fact folders.

They tell you all about air compressors — how to select them, how to care for them and how to put them to work at new and different jobs.

Write to Worthington Corporation, Section PC.4.13A, Merchandising Division, Harrison, N.J.

PC.4.13

WORTHINGTON

If you write maker identify as IEN - 6319

Stainless Steel Users—

These booklets are for YOU

Free from Frasse—these booklets have been designed to help you select the *best* stainless grade for your particular application.

Included is data on the grades and finishes available, machining rates, heat resistance, heat treatment, mechanical properties and corrosion resistance. Even the new Extra Low Carbon and Precipitation-Hardening grades are covered in detail.

You'll find them handy working tools when faced with stainless steel selection. And if you wish, Frasse engineers will be glad to put their experience and know-how to work for you. For a free copy of these handy booklets, *write Frasse today.*

FRASSE for Stainless Steel

BARS
SHEETS
STRIP
TUBES
PLATES
PIPE
VALVES
& FITTINGS

Peter A. FRASSE and Co., Inc.
17 GRAND STREET, NEW YORK 13, N. Y. • WAlker 5-2200
LYNDHURST • PHILADELPHIA • BUFFALO • SYRACUSE • HARTFORD

If you write maker identify as IEN - 6320

NOW! ...the new CANNON "AN-E" PLUGS

Moisture proof!..vibration proof!..shock proof!

Environment resisting • Meets latest military specifications

Just what you've been waiting for!

The new high-quality, streamlined, simpler, smaller and lighter Cannon AN-E meets today's military specifications with improved connector performance. *Completely sealed from cable to cable.* A multi service unit designed to meet your moisture condensation, flashover, corona, and vibration problems.

Write for "AN-E" Bulletin *today!*

Refer to Dept. 112

CANNON ELECTRIC COMPANY, 3209 Humboldt Street, Los Angeles 31, California. Factories in Los Angeles; East Haven; Toronto, Canada; London, England. Representatives and distributors in all principal cities.

Since 1915

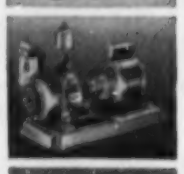
CANNON ELECTRIC

If you write maker identify as IEN - 6321

for original equipment vacuum pumps call on GAST

Motor-Pump Model 0406—To .6 CFM, 25" vac. Wt. 16 lbs., 10¼" long.

V-belt Model 1550-V2—To 10 CFM, 15" vac. For paper feeding, etc.



Heavy-duty, fan-cooled Model 1065-V4-34. To 28" vac. with ½ HP.

Heavy-duty, fan-cooled V-belt Model 2565-V12A. To 21 CFM, 28" vac.

Some accessories standard.

YOU GET HIGH QUALITY that solves product problems with long-lived high performance . . . a result of dependable rotary-vane design plus rigid quality control.

A WIDE CHOICE OF SIZES from five basic types to 24 CFM or 28" vacuum. Some models oilless construction. Our volume sales cut your costs!

YOU GET FULL COOPERATION from Gast engineers backed by over 25 years' experience building vacuum pumps for original equipment. For willing cooperation, *call on Gast!*

Write GAST— describing your specific application. Request Catalog and "Ideas" Booklet.

See our catalog in PRODUCT DESIGN FILE or write for copy

Original Equipment Manufacturers for Over 25 Years

GAST ROTARY AIR MOTORS · COMPRESSORS · VACUUM PUMPS (TO THREE H.P.) (TO 30 LBS.) (TO 28 INCHES)
GAST MANUFACTURING CORP., 119 Hickory St., Benton Harbor, Mich.

If you write maker identify as IEN - 6322

ELASTIC STOP NUT CORPORATION OF AMERICA
Dept. R17-653, 2330 Vauxhall Road, Union, N. J.

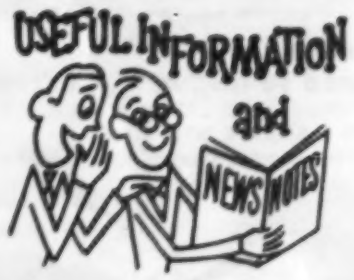
Please send me free design information on

ROLLPIN TRADE MARK

. . . the slotted tubular steel pin with chamfered ends used for production economies in replacing

- ☐ a rivet
- ☐ a set screw
- ☐ a hinge pin
- ☐ a bolt and nut
- ☐ a stop pin
- ☐ a cotter pin
- ☐ a taper pin
- ☐ a dowel

NAME _____ TITLE _____
FIRM _____
STREET _____
CITY _____ ZONE _____ STATE _____



If you write maker identify as IEN - 6323

ALLOYS . . Instructions for pattern shop on use of low-melting alloys for matchplates, patterns

Cerro de Pasco Corporation
40 Wall St., Dept. IEN, New York 5, N. Y.

Nonshrinking low-melting properties of the company's bismuth-lead alloys form the basis for instructions in new 8-page Bulletin F-6, "Cerro Alloys in the Pattern Shop". These instructions cover use as a duplicate pattern material, making master patterns direct from routed wood molds, core box and dryer patterns metallizing wood patterns and core boxes to protect them. Names and addresses are given for manufacturers of equipment mentioned.

If you write maker identify as IEN - 6324

ALLOYS . . Non-technical booklet on production and uses of alloying metals

Electro Metallurgical Co.
30 E. 42nd St., Dept. IEN, New York 17, N. Y.

"Hot-Metal Magic" is new 36-page picture booklet on ten alloying metals from boron to zirconium. It reviews their source, how they are made, how they are used in steel and other metals, outstanding properties and products dependent upon them. A table lists available forms of these metals and summarizes their principal applications.

If you write maker identify as IEN - 6325

ALUMINUM . . Report on research shows facilities and lists scope of activities

Aluminum Co. of America
726 Alcoa Bldg., Dept. IEN, Pittsburgh 19, Pa.

Pictures are used in the first section of new 56-page "Research at Alcoa" to show company's research divisions and the work done at each. A bibliography occupies the 40-page second section of some 1,000 books, technical articles and papers by the company's research men during the last 35 years. The subjects, from alloy constitution to radiography, give an idea of the scope of activity.

If you write maker identify as IEN - 6326

BATTERIES . . Pocket instruction booklet uses cartoons to emphasize maintenance suggestions

Electric Storage Battery Co.
Box 8109, Dept. IEN, Philadelphia 1, Pa.

Specific suggestions on storage-battery maintenance are illustrated and reasons given in 12-page booklet, "7 Rules". These suggestions range from adequate ventilation to keeping a written record on battery condition and maintenance. Two examples of record forms are reproduced, one for recording battery operation from day to day, the other for recording hydrometer readings at four-month intervals.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6327

AJAX INDUCTION FURNACES

helped to make this record for

BRIGGS & STRATTON CORPORATION

"More than 1,000,000 Industrial Engines built in each of two Successive years"

With holding furnaces of 20 kW similar to that in the photo above, and melting furnaces of 100 kW, Briggs & Stratton Corp., Milwaukee, Wisc., is getting increased production under cleaner, more satisfactory working conditions than ever before, *and at lower operating costs.*

Write for further information to:

AJAX ENGINEERING CORP., TRENTON 7, N. J.

AJAX TOCCO-MATIC INDUCTION MELTING FURNACE

AJAX ELECTRO METALLURGICAL CORP. and Associated Companies
AJAX ELECTROTHERMIC CORP. Air Cooled High Frequency Induction Furnaces
AJAX ELECTRIC CO., INC. The Ajax Hydraulic Direct Arc Melt Furnace
AJAX ELECTRIC FURNACE CORP. Type Multi Induction Furnaces for Melting

If you write maker identify as IEN - 6328

NEW!

WRITE FOR YOUR COPY TODAY!

New folder describes complete line of

GARLOCK SILICONE PRODUCTS

This new handy 8-page folder shows many of the Garlock products available in heat-resistant and aging-resistant silicone rubber. These products include: diaphragms, gasketing, sheet packing, oil seals, rings, insulation tape, rod and valve stem packings, and molded shapes for many industrial uses. The folder also points out the many features of silicone rubber and gives examples of typical applications. Send for Silicone Products Folder AD-147.

THE GARLOCK PACKING COMPANY
PALMYRA, NEW YORK
In Canada: The Garlock Packing Company of Canada Ltd., Toronto, Ont.
Branch Offices in Most Principal Cities

GARLOCK

If you write maker identify as IEN - 6329

WANT TO CUT COSTS?

Then let Southern's HIGH QUALITY Wood Screws work for you, to speed up production and reduce rejects.

Southern Wood Screws are precision made. Their sharp gimlet points start fast and hold tight, cut through wood without tearing. Produce **quality** results at a lower cost, to put your product in the best competitive position.

A Southern Wood Screw for every need, ready to ship from stock. All made to Federal Specifications FF-S-111a.

Screws in bulk Lubricated Free upon request.

Phillips or Slotted

Flat - Round - Oval

Write us about your special needs. Box 1360-D.

SOUTHERN SCREW COMPANY
STATESVILLE, N. C.
WOOD SCREWS • STOVE BOLTS • MACHINE SCREWS
FACTORY WAREHOUSES:
North Bergen, N. J. Chicago 10, Ill. Los Angeles 2, Calif. Dallas, Texas

If you write maker identify as IEN - 6330

HIGH AND LOW TEMPERATURES

NEW BENCH-TYPE TEST UNIT

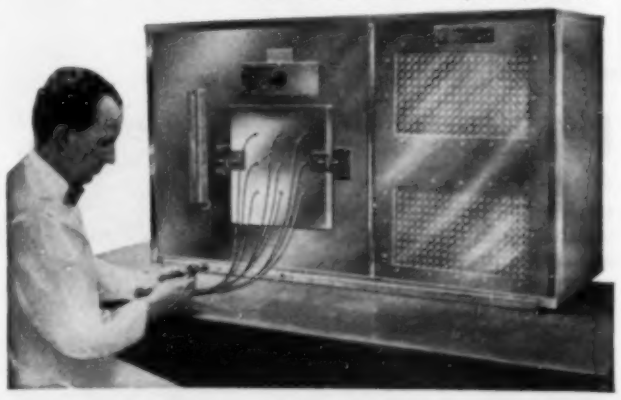
WEBBER TRADE MARK REGISTERED

COMPLETE TEMPERATURE RANGE

TESTING UNITS

Combine high and low temperatures within the same cabinet with all controls self contained. Unit measures 50"x28"x20" with a testing chamber 12"x12"x12". Temperature range is from -80° F., to 185° F. Heat application is accomplished with reverse cycle refrigeration, which eliminates the hazards associated with open heating elements. A blower is provided for even distribution of temperatures and greater testing accuracy. Latch-type or hinge-type door optional. Accelerated pull-down to -80° in 30 minutes or less.

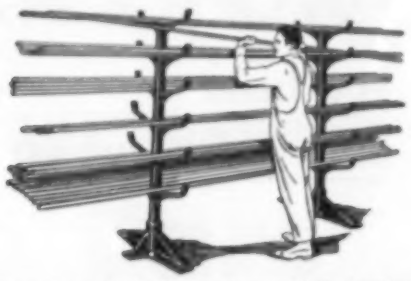
Write today for more complete information



INDUSTRIAL FREEZER DIVISION
WEBBER MANUFACTURING COMPANY, INC.
(Formerly Webber Appliance Co., Inc.)
2746 MADISON AVENUE · INDIANAPOLIS 2, INDIANA

If you write maker identify as IEN - 6331

for EFFICIENT HANDLING and ORDERLY STORAGE



You save time, both in storing and in issuing, when you use Brown Sectional Racks. Open sides speed handling. Complete visibility permits quick selection to save waiting mechanics time.

Maximum flexibility in arrangement is possible because each Brown Rack is independent and self-contained, need not be bolted to floor. Easily relocated. Systemized storage with Brown Racks promotes good housekeeping, cleanliness.

All iron and steel construction, can't burn, bend, sag or warp. Never wear out.

Get these values now! Write for complete specifications and prices on wide range of models and sizes. Brown Engineering Co., 122 N. Third St., Reading, Pa.

BROWN QUICK-SERVE RACKS

If you write maker identify as IEN - 6332

If *yours* is to be a *Superior* machine

It deserves the best variable speed drive

GET *Graham*

variable speed drive

- **ULTIMATE in SIMPLICITY and COMPACTNESS**—only the Graham is a straight line extension of a standard induction motor—or available without motor.
- **UNLIMITED SPEED RANGE**—from any desired maximum speed to zero, including reverse if wanted without stopping motor.
- **UNMATCHED ACCURACY**—of speed setting and resetting and speed holding.
- **NO PERISHABLE PARTS**—such as belts or tubes, requiring periodic replacement.
- **PROVED PERFORMANCE**—Fifteen years satisfactory use as standard equipment.
- **LOW COST**—a better job for less money.

Prompt Delivery on Standard Models

GRAHAM TRANSMISSIONS, INC.

Dept. IEN, Menomonee Falls, Wis.

GET *Graham* *most reliable variable speed drive made*

Because engineered and rated for continuous round the clock service

USEFUL INFORMATION —*Continued*

If you write maker identify as IEN - 6334

BATTERIES . . Circular cardboard selector for silver-zinc storage battery by rating required

Yardney Electric Corp.
105 Chambers St., Dept. IEN, New York 7, N. Y.

Electrical data and physical dimensions are given for 24 Silvercel storage batteries by new Application Guide. This is a cardboard selector measuring about 4 by 5½ inches. It carries a circular center member that is turned to desired battery capacity from ½ to 100 ampere-hours. Information then can be read as to discharge rate, recommended model, voltage, recommended charging rate, watt-hour per pound.

If you write maker identify as IEN - 6335

CASTINGS . . Information booklet on precision castings and company's productive service

Vascoloy-Ramet Corp.
800 S. Market St., Dept. IEN, Libertyville, Ill.

Intended originally for the company's own salesmen, new information booklet is offered on request as an informative description of investment casting. It describes the method step by step, tells what to avoid, materials, size and weight of parts, tooling, inspection. Ask for 12-page Bulletin VR-471.

If you write maker identify as IEN - 6336

CONTROLS . . How instruments are used to control a nuclear reactor described in article

Minneapolis-Honeywell Regulator Co.
Wayne & Windrim Aves., Dept. IEN, Philadelphia 44, Pa.

"Instrumentation", company's house publication, carries an article in its first-quarter 1954 issue on use of instruments to control operation of a privately-owned nuclear reactor. The issue presents other articles on controls for process operations. Your name will be added to the list upon request.

If you write maker identify as IEN - 6337

POWER CYLINDERS . . Cartoon booklet on how to set up and service air and hydraulic equipment

Logansport Machine Co.
913 Center Ave., Dept. IEN, Logansport, Ind.

"Wrong Way Jake" and "Right Way Joe" show you contrasting methods in new 24-page pocket booklet, "ABC's on Maintenance". These methods cover both pneumatic and hydraulic cylinders, valves, pipe, hose, hydraulic fluid, packings.

If you write maker identify as IEN - 6338

ELECTRICITY . . Stories of ten men who did basic work in developing electrical knowledge

Burndy Library
Dept. IEN, Norwalk, Conn.

New book, No. 11 in a current series of the history of science and technology, carries the title of "Ten Founding Fathers of Electrical Science". It has 48 pages, lists at $1. It contains biographies of Gilbert, de Guericke, Franklin, Volta, Ampere, Ohm, Gauss, Faraday, Henry and Maxwell.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6339

A PAID NEWS ADVERTISEMENT BY MATHEWSON MACHINE WORKS

NEW ADJUSTABLE DRILL JIG eliminates layout; cuts drilling time

Used for drilling holes through round stock and hex stock from ¼" to 2" and cap screws from ¼" to 1¼", the new Mathewson Adjustable Drill Jig eliminates layout and can cut drilling time on small lots to a fraction. And it eliminates the costs of special jigs for larger quantities. Holes for cotter pins, set screws, drive pins for bayonet joints, oil holes in tubular sections, and wiring holes in cap screws, are all typical of the operation that can be done more economically with this jig. Hole diameters range from .062" to .531", using your A.S.A. standard slip bushings. The hardened V-block has two 60-degree V's for centering round or hexagonal stock, one for ¼" to 11/32" diameter, one for 11/32" to 2" diameter. Adjustable stop for locating work longitudinally for drilling any distance from end, may be used on either side. Adjustable bushing carriers hold slip bushings and clamp work securely. Jig highly successful in permitting use of inexperienced drill operators. For circular write to **Mathewson Machine** Works, 26 Hancock Street, Quincy, Mass.

If you write maker identify as IEN - 6340

EVERY ENGINEER will want a copy of this BULLETIN

SEND FOR BULLETIN 110

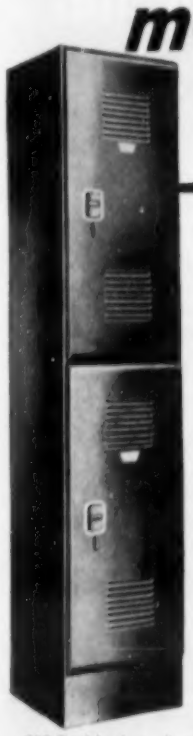
● It's easy to get the right cylinder for even the most special jobs when you use Hannifin's big hand-book on HYDRAULIC CYLINDERS. 52 pages of helpful specification and engineering data, complete with diagrams and dimensions. The Hannifin line is complete! 12 standard bore diameters, 1" to 8" . . . any length stroke you specify . . . 11 standard mounting styles . . . standard, double end or heavy duty (2:1) piston rods . . . available with adjustable cushions . . . pressures to 1500 lbs. per sq. in. Send for Bulletin 110. Hannifin also builds custom cylinders in any quantity to special designs. *Bring us your cylinder problems!*

HANNIFIN

1107 S. Kilbourn Ave., Chicago 24, Ill.
Air and Hydraulic Cylinders • Presses • Air Control Valves

If you write maker identify as IEN - 6341

Equipto introduces NEW modern-flow LOCKERS



Advanced features abound in these ruggedly built, smartly styled new Equipto MODERN-FLOW Lockers. Sliding channel construction saves 83% of assembly time . . . eliminates need for nuts, bolts, or tools. Pilfer-proof design protects valuables. Gate-type, 4-point latch operates at finger touch . . . accommodates padlock, keyed lock, or combination lock.

And the gracefully rolled edges, recessed latches and louvres, handsome baked enamel finish, and complete absence of nuts, bolts, or protruding hinges give MODERN-FLOW Lockers a clean, luxurious "look" that would flatter any interior. Available in single and double tier types in all standard sizes. You can line them up side-by-side or back-to-back in any combinations desired. Standard colors and accessories.

See these handsome lockers at your Equipto distributor today or write us for fully illustrated literature.

Equipto

DIVISION OF AURORA EQUIPMENT COMPANY
655 Prairie Ave., Aurora, Ill. • Steel Shelving . . Parts Bins . . Drawer Units

If you write maker identify as IEN - 6342

FASTER HEAT TRANSFER for 50% of the COST

with **PLATECOILS**

(REPLACE PIPE COILS)

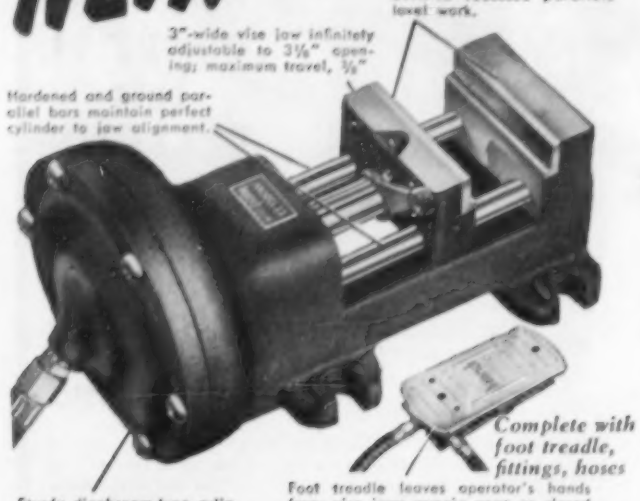
A Platecoil has more heat transfer area than a pipe coil twice its size. Thus it takes only half as much Platecoil to heat a given area. You have 50% less steel to pay for so you can save nearly 50% in initial cost. The Platecoil takes only half as much space in the tank. The greater BTU transfer per unit area of Platecoil also means faster heating or cooling. Platecoils require less maintenance and can be removed without dumping the solution.

Send for complete technical manual and descriptive Bulletin No. P56

PLATECOIL Division Tranter Mfg. Inc. LANSING 4, MICHIGAN

If you write maker identify as IEN - 6343

NEW! heinrich Model "33" AIR VISE FOR HIGH-SPEED PRODUCTION



Precision-made Heinrich Model "33" Air Vise is easier to set with simple, ratchet-operated, triple-lead threaded adjusting screw. Grips with 15 times air line or compressor pressure! All operating parts protected from oil, dirt, chips, etc. Saves tooling costs; use it as base structure.

New Catalog Free!

Be sure you have a complete Heinrich Tool Catalog in your files. Your copy will be sent free upon request.

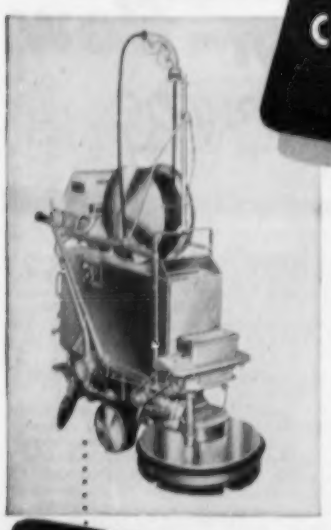
heinrich TOOLS, INC.

DEPT. 174-F • RACINE, WIS.

Drill Press Vises • Fixture Locks • Nibblers Punches • Rod Cutters

If you write maker identify as IEN - 6344

Self-Propelled SCRUBBER-VAC.... .... CUTS CLEANING TIME 2/3!



For **Small-Area Factories (2,000 to 15,000 sq. ft. of floor)**

The *418P Finnell Scrubber-Vac* cleans floors in about *one-third the time* required with a conventional 18" scrubber-polisher. Also handles the dry work—polishing, steel-wooling, etc. No switches to set for *fast* or *slow*. 18" brush ring. *Quiet* vac. The machine can be leased or purchased.

Applies cleanser, scrubs, and picks up—in ONE operation!

FIND OUT WHAT YOU WOULD SAVE... with a *Finnell Scrubber-Vac*. Finnell makes several models and sizes. For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2606 East Street, Elkhart, Indiana.

FINNELL SYSTEM, INC. *Originators of Power Scrubbing and Polishing Machines* — BRANCHES IN ALL PRINCIPAL CITIES

If you write maker identify as IEN - 6345

JUST PLUG IN TO 115V FOR TEMPERATURE RANGE OF +250° TO —100°

CONRAD

PORTABLE TEMPERATURE TEST CHAMBERS

Standard Interior Dimensions. 16 x 16 x 16; 20 x 20 x 18 In.

Here is low cost answer to the need for precision controlled temperature test chambers in laboratory or plant. New Conrad test chamber is caster mounted for full portability. Dimensions permit passage through 30" door. Air cooled, no plumbing attachments. Just plug into 115V circuit (220V 3 phase model also available.) Temperature range +250° to —100° F.

PROVEN DESIGN — FULLY INSTRUMENTED

The new Conrad portable chamber is based on years of experience in producing environmental chambers of all types. Interior stainless steel. Insulation is rigid permanent type. Coolant is safe Freon so chamber can be used anywhere with no hazard.

Forced air circulation. Adjustable Indicating Thermostat Controller. Differential + or —2°F. Control Switches grouped on engraved indicator plate. Proportional capacity for heating, cooling rate available.

Conrad also produces a full range of temperature, humidity, altitude environmental chambers; dry or liquid. Write for data sheets and prices.

CONRAD, INC. 141 Jefferson St. Holland, Michigan

USEFUL INFORMATION —*Continued*

If you write maker identify as IEN - 6346

ELECTRONIC PRODUCTS . . Application ideas for germanium crystals in booklet directed at industry

Sylvania Electric Products Inc.
1740 Broadway, Dept. IEN, New York 19, N. Y.

Applications of interest to industry are presented in new 48-page Booklet NP-74, "Industrial Uses for Germanium Crystals". List price is 25 cents. These applications are grouped under subjects of relays, timing circuits, power supply, instrumentation. A circuit diagram is shown for the ideas presented.

If you write maker identify as IEN - 6347

ENGINEERING . . Data handbook, 1912 pages, of information and tables on mechanical subjects

Industrial Press
148 Lafayette St., Dept. IEN, New York 13, N. Y.

Fifteenth Edition of Machinery's Handbook brings it up to date on such topics as gears, fastener dimensions, screw threads, anti-friction bearings, milling cutters, honing, titanium. The book lists at $9, presents information on mathematical tables, mechanics and strength of materials, gearing, gages, small tools, speeds and feeds, alloys and steels, motors.

If you write maker identify as IEN - 6348

PAINTING . . How to use a spray gun described by motion diagrams and text in booklet

DeVilbiss Company
300 Phillips Ave., Dept. IEN, Toledo 1, Ohio

"Spray Gun Motion Study" titles new 16-page Booklet F-275, intended as a set of helpful suggestions on the use of paint spray equipment. It shows right and wrong ways to make a stroke, procedure in finishing a panel, how to do long work, spraying a level surface, edges and corners, open work. Continuity of motion is stressed.

If you write maker identify as IEN - 6349

PLASTICS . . New house publication reports developments of interest to plastic molders

Bakelite Company
260 Madison Ave., Dept. IEN, New York 16, N. Y.

FIRST issue of "Bakelite Molding News" is devoted to an announcement of a new general-purpose phenolic molding material, BMG-5000, together with properties and molding advantages. Future issues will report on polyethylene, vinyl, fluorothene, styrene and other materials as well as developments in the industry. Your name will be added to the list.

If you write maker identify as IEN - 6350

PRESSES . . Suggestions on modernizing straight side and gap frame double-crank presses

E. W. Bliss Company
1375 Raff Road S. W., Dept. IEN, Canton 10, Ohio

Forty-two factory-built field-installed conversion assemblies are offered by the company to bring your older presses up to date at moderate cost. Eighteen of these are illustrated in new 16-page Bulletin 46 by "before-and-after" drawings with notes on the benefits to be derived. They include power slide adjustment, clutch modernization, motor drive.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6351

NEW COMPACT POWERFUL

ELECTRIC VIBRATOR

To speed the flow of stubborn material from hoppers, bins and chutes of all sizes and shapes.

Obtainable in all voltage, phase and cycle requirements.

Write today for complete literature.

THE CLEVELAND VIBRATOR CO.

2736 Clinton Avenue • Cleveland 13, Ohio

If you write maker identify as IEN - 6352

IF

you bend thin-walled tubing

THEN

you can prevent wrinkling and make perfect bends to smallest radius, by the Cerrobend Method. Save time and money by filling tubes with Cerrobend, the expanding metal that melts in hot water. Then bend the tubes like solid rods. After bending, melt out the Cerrobend in hot water. It can be reused indefinitely.

Write for Data Sheet H3.

CERRO DE PASCO CORPORATION

Dept. 6, 40 Wall Street, New York 5, N. Y.

If you write maker identify as IEN - 6353

Overhead Work's *Not just 'UP'*

When you have to go *around* a job or *get inside* a curved structure, buy Universal Ezebilt—*the one scaffold* you can use on most every job. For example, Ezebilt's exclusive Gravity-Lock brace mechanism lets you "swivel" standard panels to "circle" curved surfaces, or to "rack-down" safely in narrow passages. And you don't need to fuss with nuts and bolts or loose parts—Ezebilt's rustproof Gravity-Lock helps you to put your scaffold up and take it down in much less time—handle jobs easier and faster because there are '*no bolts to master*.'

UNIVERSAL Ezebilt SCAFFOLDING

Write for New Catalog

Shows how to "custom-build" work platforms to any size or shape with standard Universal Ezebilt Scaffolding.

CIRCLING — SAFETY ROLLING TOWER

Distributors offer fast help and service. See your phone directory.

UNIVERSAL MANUFACTURING CORP.
ZELIENOPLE 5, PA.

If you write maker identify as **IEN - 6355**

A-1035

EASTON

Furnace Cars

EASTON experience covers small and large capacity furnace cars for every requirement, including electric self-propelled cars for automatic continuous heat treating systems.

EASTON CAR & CONSTRUCTION CO. • EASTON, PA.

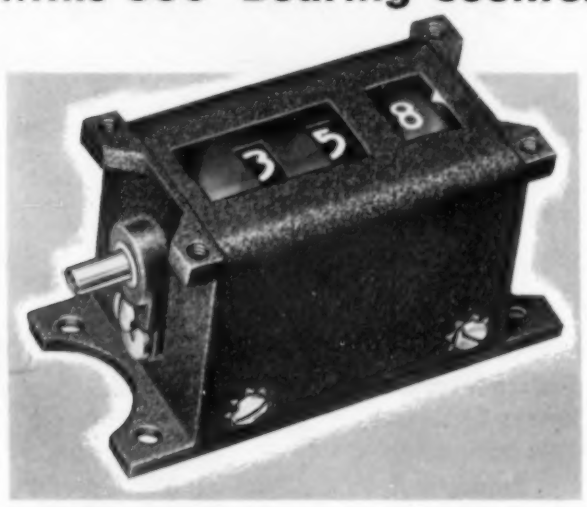
NEW YORK • PHILADELPHIA • PITTSBURGH

If you write maker identify as **IEN - 6356**

★ ★ ★ ★ ★

IT'S NEW...IT'S NEWS!

...this 360° Bearing Counter



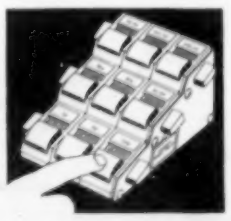
Smaller and more compact than ever, this new 360° Bearing Counter gives users several *bonus* advantages: It can be either base-mounted, or face-mounted flush with a panel surface. It will run at 1500 rpm constant speed or 2500 rpm on intermittent service . . . and it comes equipped with Geneva Transfer.

Added Evidence that —

Everyone Can Count on VEEDER-ROOT

This is another Veeder-Root "first" . . . the latest of one of hundreds of standard and special Veeder-Root Counters for every mechanical and electrical application. What do *you* want to count?

ANOTHER NEW VEEDER-ROOT "FIRST"
New *Vary-Tally* Multiple-Unit Reset Counter gives you quick finger-tip count of anything countable. Comes in any combination up to 6 banks high, and 12 units wide (minimum of 2 units wide). Write for news sheet and prices.



VEEDER-ROOT INCORPORATED
HARTFORD 2, CONNECTICUT

Chicago 6, Ill. • New York 19, N. Y. • Greenville, S. C.
Montreal 2, Canada • Dundee, Scotland
Offices and Agents in Principal Cities

"The Name that Counts"

If you write maker identify as **IEN - 6358**

FILTERING . . Permanent element to remove solid matter from liquids

Source: HOMEFILTER COMPANY
One Bigelow St., Dept. IEN, North Brookfield, Mass.

Bulletin 102CS

Cylindrical elements made of ceramic, sintered bronze, porous Alundum, are enclosed in the housing of this new Por-O-Met filter. The element is assembled in a housing fitted with valve controlled passages that permit back washing to remove accumulated foreign matter. Ceramic filter elements are standard and can be specified to remove foreign particles as small as 6 microns. A unit for general use will remove material down to 50 microns without decrease in the flow rate of the connected pipe line.

Two pipe sizes are 1 and 2 inch. Face to face dimension, between the inlet and outlet, is 9 and 13½ inches. Overall height is 12¼ and 14½ inches. Weight is 45 and 102 pounds. The filter is designed for pressure to 125 pounds.

If you write maker identify as **IEN - 6359**

CLEANING . . Liquid inhibitor for addition to pickling solutions

Source: OAKITE PRODUCTS INC.
116-A Rector St., Dept. IEN, New York 6, N. Y.

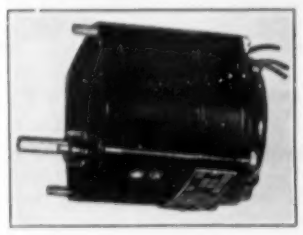
Technical data upon request

Pickle Control No. 5 is a new liquid inhibitor for addition to pickle solutions based on sulfuric, hydrochloric, phosphoric acid or combinations of the three. In addition to its ability to inhibit, it also forms a foam blanket on the solution. The liquid is a viscous consistency, red brown in color with a characteristic odor. It is shipped in 115 and 400-lb. drums. It has an approximately neutral pH and bulk density of 8.74 lb. per gallon.

If you write maker identify as **IEN - 6360**

MOTOR . . Geared head reversible for instrument drive, 0.7 to 280 rpm.

Source: BODINE ELECTRIC CO.
2254 W. Ohio St., Dept. IEN, Chicago 12, Ill.



Noiseless

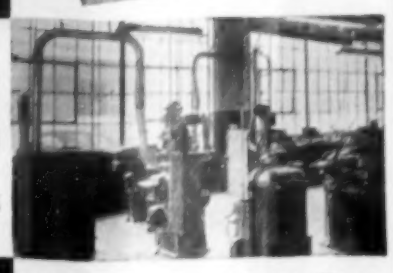
Type K-2RM is a new reversible geared head motor with either synchronous or non-synchronous winding and with a head enclosing helical gears to provide a specified speed between 0.7 and 280 rpm. Corresponding torque ratings are 120 to 2.7 inch ounces. The motor provides starting torque at 150 per cent or better of full load torque at room temperature. Dimensions are 2⅜ by ⅜ by about 2 7/16 to 3⅜ inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6361**

FROM PEDESTAL GRINDERS

TO Complete Shop Installations



TORIT

WILL SOLVE YOUR DUST PROBLEMS

Industrial dusts are dangerous. They can damage precision machines or finished parts, create bad working conditions, reduce employee efficiency, and increase your insurance rates.

Whether it's just a single pedestal grinder or a whole battery of cut-off, grinding and polishing machines, Torit Dust Collectors will solve your dust problem—do it efficiently, economically and with a minimum of interference to your production layout.

Standard Torit Dust Collectors fit most situations and special adaptations can be quickly created, write for full information.

TORIT Manufacturing Co.
286 WALNUT STREET
ST PAUL 2, MINN.

If you write maker identify as **IEN - 6362**

New MERCURY "BANTY" GAS TRACTOR

Available in Two Capacities: 2300 and 3000 lbs. DBP.

Model 460

Over 41 years experience in the manufacturing, designing, and installation of material handling equipment.

MERCURY
FORK TRUCKS TRACTORS TRAILERS

Here it is...the completely new MERCURY "Banty." A small, rugged 4 wheel gasoline tractor with a turning radius of only 62". Features new double reduction drive axle with demountable wheel rim and tire assemblies... self-energizing hydraulic brakes ...new semi-elliptic spring suspension, front and rear...cushion or pneumatic tires.

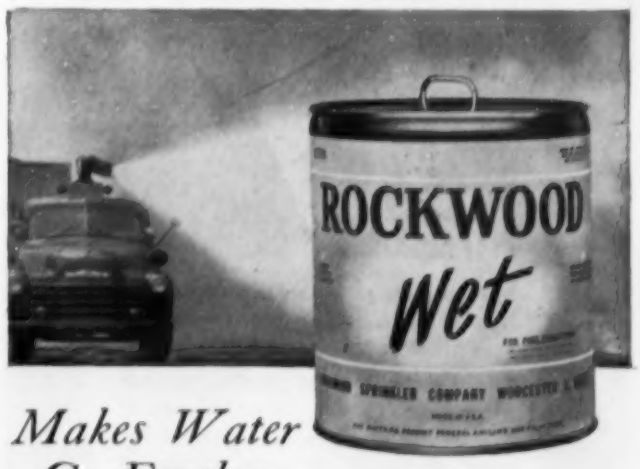
For complete information write:
MERCURY MANUFACTURING COMPANY
4132 S. Halsted St., Chicago

If you write maker identify as **IEN - 6363**

SPRACO NOZZLES

Write for NOZZLE CATALOG *to*
SPRAY ENGINEERING CO.
110 CENTRAL STREET • SOMERVILLE 45, MASS.

If you write maker identify as **IEN - 6364**



Makes Water Go Farther

Rockwood WET — a liquid prepared especially for fire-fighting — increases the spread and penetration of water. Used in solution of 1 part WET and 99 parts ordinary water.

Recommended for fires involving ordinary combustibles such as wood, paper, cloth. And excellent for use with WaterFOG where water is extremely scarce for fire-fighting — such as rural residences, barns, forest and grain fires, factories in outlying districts. Rockwood WET carries water into deep-seated fires in stumps, piles of leaves, duff and other spots where fires might smolder after flames have been extinguished — and where wind could fan smoldering embers into another open fire. With WET, such rekindling is reduced. Also excellent for dust control purposes.

Write for *"Fire-Fighting Products,"* Rockwood's illustrated catalog. Distributors in all principal cities.

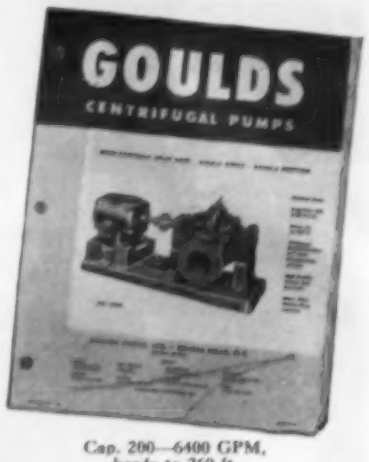
ROCKWOOD SPRINKLER COMPANY

Engineers Water . . . to Cut Fire Losses

306 HARLOW STREET, WORCESTER, MASS.

If you write maker identify as **IEN - 6365**

12 pages of facts about a NEW LINE of 19 pumps



Cap. 200—6400 GPM, heads to 260 ft.

Here's good news for pump buyers. The new Goulds Bulletin No. 721.6 gives you a host of information on the *extra* design features that are *standard* on Goulds new Fig. 3405 pumps.

Included are stuffing box bushings, steel-impeller keys, Teflon water seal rings—to mention a few.

This pump construction requires only three shaft and rotating parts assemblies (exclusive of wearing rings and impellers) to provide for 19 pump sizes.

But, get all the facts on how you can save on down time, maintenance costs and spare parts inventories. Write for Bulletin 721.6 today.

Goulds PUMPS INC. Seneca Falls New York

If you write maker identify as **IEN - 6366**

This Abrasive Belt Grinder increased production 200%!

● Time and time again, in hundreds of plants, Engelberg BG8 Abrasive-Belt Grinders have greatly speeded up operations previously performed on lathes, milling machines and ordinary grinders.

For example, the rim of the metal box shown above was originally milled for a close-fitting, watertight cap at the rate of 33 per hr. Output with a BG8 Grinder is now 99 per hr. This is only one of the documented case histories described in our free Abrasive-Belt Grinder booklet. Send for your copy today. Better yet, send samples of your machined pieces for our analysis. No obligation.

ENGELBERG THE ENGELBERG HULLER CO., INC. 146 Seneca Street Syracuse, N. Y.

Manufacturers of Porter-Cable Abrasive-Belt Grinders

If you write maker identify as **IEN - 6367**

SPRAY NOZZLES

for chemical spraying, cooling, humidifying, dehydrating, and hundreds of other applications

You'll get the *right* nozzles quicker by calling Binks...manufacturers of one of the most complete selections ever produced. A wide range of spray patterns, sizes, capacities... with nozzles cast or machined from standard or special corrosion-resistant metals.

Binks Manufacturing Company
3120-34 West Carroll Ave.
Chicago 12, Ill.
O. K. BINKS. Send me your Spray Nozzle Catalog...FREE!

NAME _____
ORGANIZATION _____
ADDRESS _____
CITY _____ ZONE ____ STATE _____

Binks A COMPLETE LINE OF INDUSTRIAL SPRAY NOZZLES AND COOLING TOWERS

USEFUL INFORMATION—*Continued*

If you write maker identify as **IEN - 6368**

PRESSES . . Selection of hydraulic oil and recommendations on its use in new 16-page bulletin

Denison Engineering Co.
1160 Dublin Road, Dept. IEN, Columbus 16, Ohio

Importance is stressed for careful selection of hydraulic oil at the start of new Bulletin 45, followed by information on performance properties required and a set of recommendations. Next is a description of factors affecting hydraulic oil performance, procedure to assure suitable oil condition, concluded by a number of operating notes.

If you write maker identify as **IEN - 6369**

PROTECTING . . Hazardous gases in six-page list with mask recommendations

Acme Protection Equipment Co.
3037 W. Lake St., Dept. IEN, Chicago 12, Ill.

Acetaldehyde to Zyklon Discoids is the range of 433 hazardous gases, fumes, mists and dusts listed in new Protection Guide 542. Along with each name is a note on composition or characteristics, tolerance limits, recommended canister.

If you write maker identify as **IEN - 6370**

PUMPS . . Booklet on pump selection actually is a slide film presentation in printed form

Ingersoll-Rand Company
11 Broadway, Dept. IEN, New York 4, N. Y.

Booklet 7123, 16 pages, shows 56 sequence pictures and captions from a slide film originally produced to instruct the company's distributors and dealers. It tells how a centrifugal pump works, performance factors such as volume, pressure, friction losses, efficiency vs output, priming, steps in selection, pump materials, points of application.

If you write maker identify as **IEN - 6371**

PUMPS . . Maintenance suggestions on company's pumps in technical article reprint

Milton Roy Company
1300 E. Mermaid Lane, Dept. IEN, Philadelphia 18, Pa.

Technical Paper 63 is a 4-page reprint of an article from the technical literature by B. S. Bertolet, company's Service Manager. Title is "Installation and Maintenance of Controlled Volume Pumps". Information covers precautions in suction and discharge piping, suggestions on preventive maintenance of packings, checking pump operation, trouble-shooting chart.

If you write maker identify as **IEN - 6372**

ROOFS . . Color sound movie gives instructions on roof repair with glass fabric

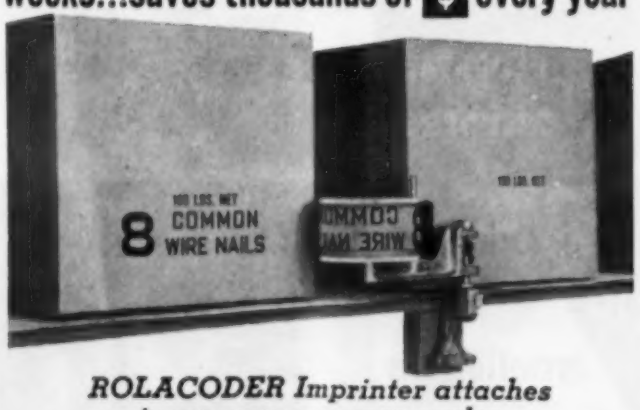
Twinsburg-Miller Corporation
Box 207, Dept. IEN, Twinsburg, Ohio

Roof maintenance from repair of blisters and cracks to a complete resurfacing job is the subject of new 16-mm. film, "Mr. Glasfab Goes Topside". Step by step procedures are shown, using glass-fiber fabric and cold asphalt materials. The film is available on loan. Showing time is 18 minutes.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6373**

Low-cost case marker pays for itself in weeks...saves thousands of $ every year



ROLACODER Imprinter attaches to conveyor or case-sealer

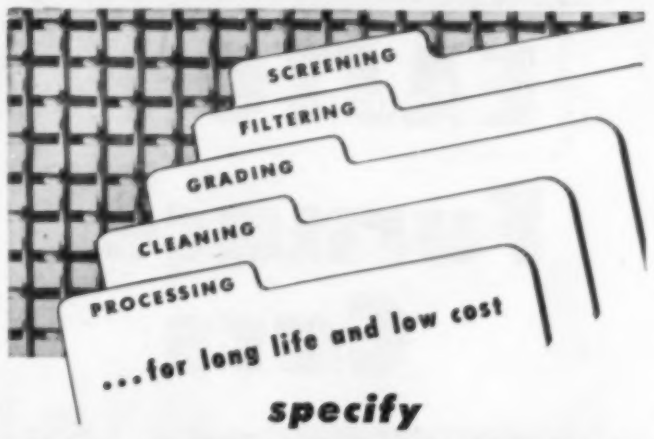
Now you can do away with that costly extra operation for manual rubber-stamping or stencilling of code-dates, lot numbers, contents descriptions, etc. on cases...or reduce big inventories of completely printed cases...and save thousands of dollars annually. Use an inexpensive ROLACODER machine to mark your cases automatically on the production line. Compact, precision-made ROLACODER is friction-operated, self-inking—makes single, accurately located imprint on each case to register with other copy. Uses quick-change rubber type or dies, holds 8-hour ink supply. Different models available to imprint top, ends, sides of small or large boxes, cartons, cases, other packages.

Write for descriptive literature

Gottscho ADOLPH GOTTSCHO, INC. Hillside 5, N. J. 50 Years of Leadership

In Canada: RICHARDSON AGENCIES LTD., Toronto & Montreal

If you write maker identify as **IEN - 6374**



specify

CAL-WIC MESH CLOTH

You'll find CAL-WIC Mesh Cloth available in a wide variety of weaves, weights and meshes...fabricated in various types of metals and alloys for resistance to corrosion, abrasion, or high temperatures.

For original equipment or replacement, investigate the advantage of "precision-made" CAL-WIC Mesh Cloth. Write for further information.

THE COLORADO FUEL AND IRON CORPORATION — Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION — Atlanta • Boston • Buffalo
Chicago • Detroit • New Orleans • New York • Philadelphia

CAL-WIC INDUSTRIAL SCREENS THE COLORADO FUEL AND IRON CORPORATION CFI

1904

If you write maker identify as **IEN - 6375**

ALEMITE OIL-MIST

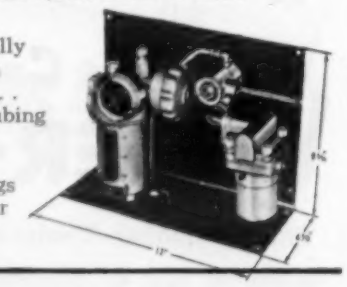
Saved $2400 first year

...extended bearing life from 20 weeks to one year and four months

Eastern Manufacturer Breaks Bottleneck, Cuts Downtime, Ups Production!

Bearing temperatures were running 200° on an important blower. Production losses totaled $1000 with each frequent bearing failure. After careful study of the problem, management installed an Alemite Oil-Mist unit costing little more than $100. Result: No bearing failures; downtime eliminated! $2400 *saved* to date!

Alemite Oil-Mist is a fully automatic system which atomizes oil into mist . . . distributes it through tubing to bearings . . . applies a constant uniform oil film to groups of bearings designed either for oil or grease lubrication.



delivers oil to bearings 3 ways

1. Oil-Mist as Such. For any type of anti-friction bearing—ball, roller or needle.

2. Oil in Spray Form. For open and enclosed gears and chains. Nozzle partially condenses mist so that it can be directed onto a concentrated area.

3. Oil-Mist Condensed. For plain bearings, slides, ways, vees, cams and rollers. In these applications, condensing fittings convert oil mist to liquid oil.

Get the facts NOW!

Let us send you the complete story on Oil-Mist. Specifications, models, typical applications, actual case histories. Get yours now. Write Alemite Division of Stewart-Warner, Dept. K-64, 1850 Diversey Parkway, Chicago 14, Illinois.

If you write maker identify as IEN - 6377

NEW

For Driving Threaded Inserts

TITAN BUSHING DRIVER

Unique design features of this new production tool provide automatic positioning of threaded inserts to the proper depth below the face of the casting. A ball bearing pressure plate prevents backing the insert out after driving. Standard Titan Bushing Drivers are equipped with ½" female square drive, to drive threaded inserts .010" below face of the casting. Manufactured in sizes for all threaded inserts commonly in use.

Write for Details

TITAN TOOL CO.
Production Tools
52 Main St., Fairview (Erie Co.), Pa.

If you write maker identify as IEN - 6378

First in Nation-wide Service!

CALL YOUR LOCAL TOWMOTOR REPRESENTATIVE

An important part of TOWMOTOR policy is to spot service facilities *near* each TOWMOTOR user. For fast service and the name of your closest TOWMOTOR Sales and Service office, see the yellow pages of your local telephone directory. TOWMOTOR CORPORATION, Div. 2606, 1226 East 152nd Street, Cleveland 10, Ohio.

TOWMOTOR
THE ONE-MAN-GANG

FORK LIFT TRUCKS and TRACTORS
SINCE 1919

TOWMOTOR ENGINEERED FOR QUALITY PERFORMANCE

If you write maker identify as IEN - 6379

Ametron Recording Counter

Consists of two basic electrical circuits, both normally open. Momentary closure of the counting circuit advances indexing device one step. Momentary closure of print circuit causes unit to print accumulated count. Automatic reset to zero available if desired. A wide variety of timing mechanism available as standard equipment.

This unit may also be furnished to record elapsed time in these increments: 1/10 minute, 1/100 minute, 1 second and 1/10 second. Counting unit may also be equipped for direct drive from a rotating shaft to count revolutions in units of one tenth.

Write for circular RC 12.

• THE STANDARD OF ACCURACY SINCE 1888 •

STREETER-AMET COMPANY
4101 RAVENSWOOD AVENUE • CHICAGO 13, ILLINOIS

If you write maker identify as IEN - 6380

TESTING . . Environment chamber, adjustable temperature to 140 deg. F.

Source: LABLINE INCORPORATED
217 N. Desplaines St., Dept. IEN, Chicago 6, Ill.

Bulletin, "Lab Room"

The company announces new construction, with aluminum sheet inside and outside and 3 in. glass wool insulation, for its Lab Rooms, initially developed a number of years ago. Four sizes provide work chambers measuring 3 by 2 by 5 ft. to 4 by 8 by 7 feet. Heat is provided by a Thermoplate unit controlled by a thermostat. The floor is formed of aluminum plate. The shelves are perforated aluminum. A plenum chamber provides circulation for air that enters through a series of 1-in. aluminum tubes located in the side and rear walls. Air exhausts through a top outlet with the aid of a motor driven fan that employs a sealed permanently lubricated motor and aluminum fan blades.

Refrigeration, for temperatures below ambient, can be specified. In this case a hermetically sealed air cooled compressor is supplied with shock absorbing mounts to assemble on top of the cabinet. It serves a finned cooling unit with a self-contained circulating fan that is secured from the ceiling at the rear of the enclosed space. A thermostatic switch and expansion valve control the low temperature. A window is provided in the door in all but the smallest unit in the line. The interior is illuminated with a 32-watt circuline fluorescent light controlled by an external switch.

If you write maker identify as IEN - 6381

TIMING . . Hydraulic relay delays operation of circuit contacts

Source: HEINEMANN ELECTRIC CO.,
518 Plum St., Dept. IEN, Trenton 2, N. J.

Bulletin 5201

The delay between energizing this new Type-F Silic-O-Netic relay can be specified at any point between ¼ and 120 seconds. The assembly is hermetically sealed and the interior air space can be filled with inert gas. Energizing the relay coil draws the core into the magnetic field against the retarding action of silicone fluid that is sealed with the core in a non-magnetic metal tube extending through and beyond the coil. The contacts are actuated by increase in magnetic flux as the core touches the pole piece.

Octal-pin or solder-lug terminals can be specified with the relay operating on 24 to 220-volt ac. or 12 to 125-volt dc. Contact rating is 3 amp. on 110-volt ac., 1 amp. on 50-volt dc. Single-pole single-throw and double-pole double-throw switching action can be ordered. The relay applies wherever a delay interval is required for equipment protection or to insure correct operation. Housing dimensions are 1½ by 1½ by 2½ inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6382

Grounds upkeep and maintenance problems are solved quickly, easily and BETTER when you use the powerful 5-HP Gravely Tractor! . . . 21 tools for year-round use with seasonally selected attachments, quick change from job to job in minutes! Only the Gravely does so many jobs so well!

All-Gear Drive, Power Reverse. Institutions-tested for 32 years.

Ask for your copy of FREE Gravely catalog, "Power vs. Drudgery." See how you can do MORE jobs faster and better

GRAVELY TRACTORS, INC.
BOX 640 DUNBAR, W. VA.

If you write maker identify as IEN - 6383

SAVE CHROMIC ACID WASTE UP TO 70%

USE *UDYLITE*
ZERO-MIST

Zero-Mist is an amazing new additive that completely eliminates chrome mist and spray. It saves you dollars in chromic acid costs because it saves up to 70% of chromic acid waste.

In using Zero-Mist there are many other savings:

- Drag-out losses reduced by 50% or more.
- Lowers rinse requirements and rinse contamination.
- No spray contamination of other solutions.
- Eliminates need for water wash systems.
- Drastically reduces chrome stains.
- Indestructible at all temperatures and in all concentrations.

Only small quantities of Zero-Mist need be added to protect drag-out losses.

Call your Udylite representative today for complete details or write direct to...

THE Udylite CORPORATION
DETROIT 11 • MICHIGAN

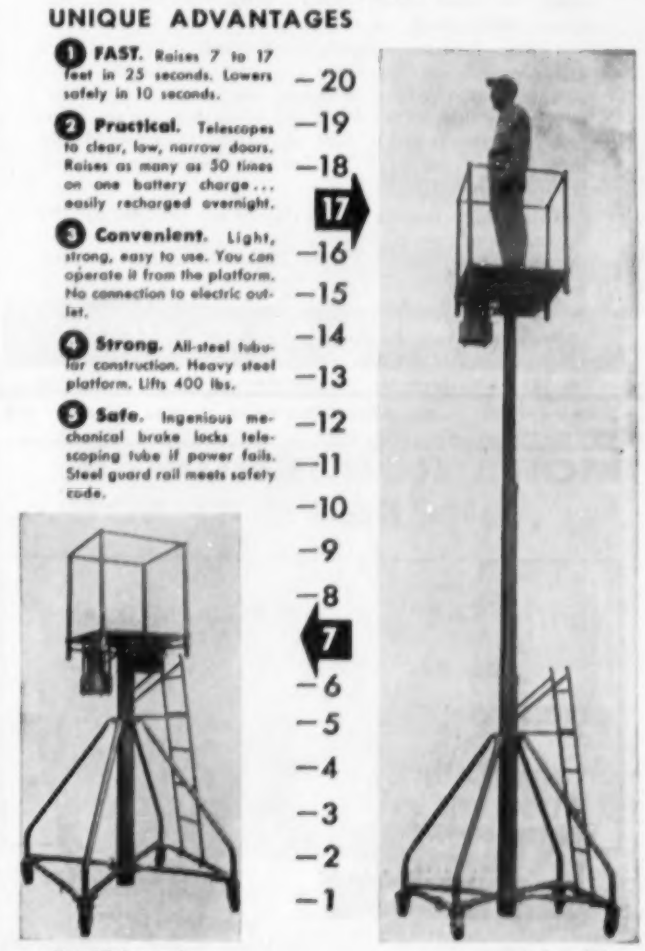
If you write maker identify as IEN - 6384

7 to 17 feet in 25 seconds!

HERE'S AN EFFICIENT NEW WAY TO SPEED UP ELEVATED MAINTENANCE WORK ON YOUR BUILDING AND PRODUCTION EQUIPMENT. MOTO-LIFT, Safway's one man rolling tower, is deliberately designed to reach hard-to-get-at places quickly. It's just the thing for time-saving repairs, painting, machine lubrication, or ceiling work on electric lights up to 23 feet high.

UNIQUE ADVANTAGES

1. **FAST.** Raises 7 to 17 feet in 25 seconds. Lowers safely in 10 seconds.
2. **Practical.** Telescopes to clear, low, narrow doors. Raises as many as 50 times on one battery charge . . . easily recharged overnight.
3. **Convenient.** Light, strong, easy to use. You can operate it from the platform. No connection to electric outlet.
4. **Strong.** All-steel tubular construction. Heavy steel platform. Lifts 400 lbs.
5. **Safe.** Ingenious mechanical brake locks telescoping tube if power fails. Steel guard rail meets safety code.



Moto-Lift Lowered — Moto-Lift Extended

THE MOTO-LIFT is designed to outlast and outperform other maintenance towers. Saves you time. Makes maintenance dollars go further.

Write for Free Bulletin IEN-553

RENTED and SOLD by distributors everywhere

SAFWAY STEEL PRODUCTS INCORPORATED
6228 West State St., MILWAUKEE 13, WIS.
Manufacturers of Tubular Steel Scaffolding and Equipment

If you write maker identify as **IEN - 6386**

Free!

NEW ILLUSTRATED CATALOG!

How Versatal Methods Can Help Solve Your Material Handling And Production Problems!

Versatal Pumps deliver materials *direct* from original containers to points of use . . . speed, simplify, cut cost of material handling. Ideal for spraying, extruding, transferring, and packaging. If you handle liquid or semi-solid materials, this is worth looking into!

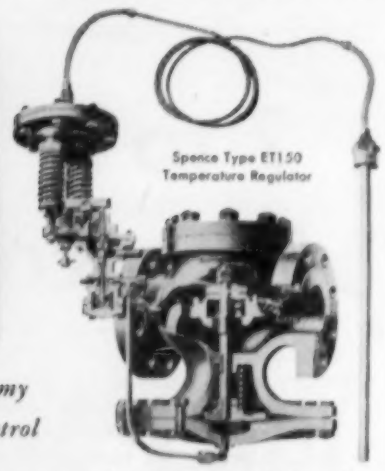
FREE! Tear Out This Ad!

SW ALEMITE Versatal SPRAY-PUMP EQUIPMENT

Clip it to your letterhead and mail to: Alemite, 1830 Diversey Parkway, Chicago 14, Illinois.

If you write maker identify as **IEN - 6387**

NO Reducing Valve Needed



Here's real economy in temperature control

Because Spence Temperature Regulators are designed to limit heater steam pressures to an adjustable maximum, the need for a separate reducing valve is completely eliminated.

This means one relatively small combination pressure and temperature regulator replaces a reducing valve of the same size and a larger temperature regulator. Practically the entire cost of the large separate temperature regulator is saved. And, the total saving would also include the cost of a 3-valve by-pass along with all labor for installation.

This design feature is just one of the reasons for the thousands of Spence installations throughout American industry. *For details of other important design features, write for Temperature Regulator Bulletin.* SE-137

SPENCE ENGINEERING COMPANY, INC. WALDEN, NEW YORK — Spence

If you write maker identify as **IEN - 6388**

MORE HORSEPOWER ...IN LESS SPACE...

with the **NEW STERLING** *Motor Line*

NEW NEMA MOUNTING DIMENSIONS

KLOSD-TITE FAN-COOLED CONSTANT NORMAL SPEED MOTORS

PLUS...

THESE 10 STERLING ADVANCED DESIGN FEATURES

Over 50% less inactive space	Herringbone rotor
Protected construction	Dual cooling system
Greater bearing protection	Increased efficiency and performance
Advanced design terminal box	Stator windings of advanced design
Heavy duty ball bearings	Improved insulation

WRITE FOR NEW BULLETIN No. F-422-AW

STERLING ELECTRIC MOTORS

New York City 51; Chicago 35; Los Angeles 22; Hamilton, Ont., Canada; Santiago, Chile

USEFUL INFORMATION —*Continued*

If you write maker identify as **IEN - 6389**

SAFETY . . On the highway booklet analyzes traffic accidents, gives reasons why

Travelers Insurance Companies
702 Main St., Dept. IEN, Hartford 3, Conn.

Statistics too bitter to swallow unaided are sugar-coated with cartoon illustrations in current edition of the company's booklet of facts on highway accidents during 1953. The booklet carries the title of "The Passing Scene". It presents its analysis in 14 tables, both for 1953 and 1952, concludes that speed was the principal cause of accidents.

If you write maker identify as **IEN - 6390**

SEALING . . How to seal leaks, repair cracks, anchor fastenings described in booklet

Smooth-On Mfg. Company
570 Communipaw Ave., Dept. IEN, Jersey City 4, N. J.

1954 Edition of the company's 48-page pocket Repair Handbook tells how to do a variety of construction and repair work by means of the company's twelve iron cements. Some of these are repairing cracks in pipes and equipment, sealing leaks in boilers and tanks, tightening loose parts, anchoring bolts and screws, stopping leaks in masonry, patching floors.

If you write maker identify as **IEN - 6391**

SHIPPING . . Pocket instruction manual on loading company-equipped railroad box cars

Evans Products Co.
Dept. IEN, Plymouth, Mich.

DF Loader-equipped box cars have rows of perforated angles along the walls and are supplied with matching cross members and deckboards to brace loads against damage. New 24-page Manual 54-3 tells how to use the equipment to load and unload the car. Drawings and text describe how to plan and place such loads as cases, drums, cartons, appliances, plate glass, sheet steel.

If you write maker identify as **IEN - 6392**

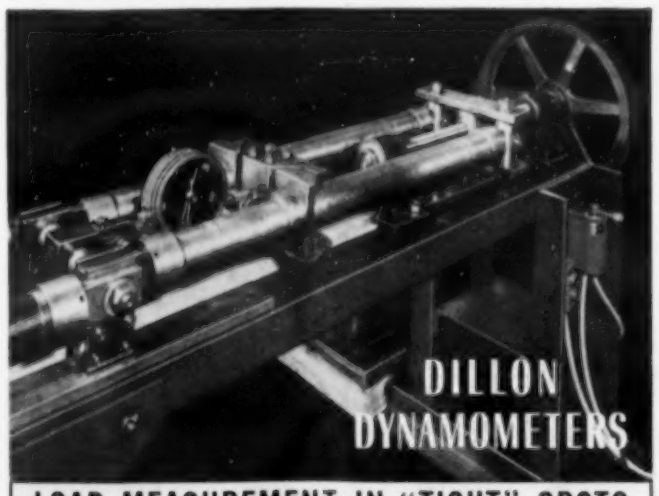
STAINLESS STEEL . . Booklet on its use in chemical process equipment covers fabrication methods

Allegheny Ludlum Steel Corp.
2020 Oliver Bldg., Dept. IEN, Pittsburgh 19, Pa.

How Allegheny Metal is used in manufacture of acids, plastics, pharmaceuticals, dyes, soap and chemicals is described by facts, figures and pictures in 36-page booklet. Title is "Allegheny Metal in Chemical Processing", Bulletin SS-11, second edition. There is a chart on comparative properties of 13 types, corrosion resistance data, information on fabricating methods.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6393**



LOAD MEASUREMENT IN "TIGHT" SPOTS

Above view shows DILLON DYNAMOMETER hooked into mechanical assembly to indicate exact amount of friction encountered by packing in hydraulic cylinders. Just one of scores of uses for this handy instrument.

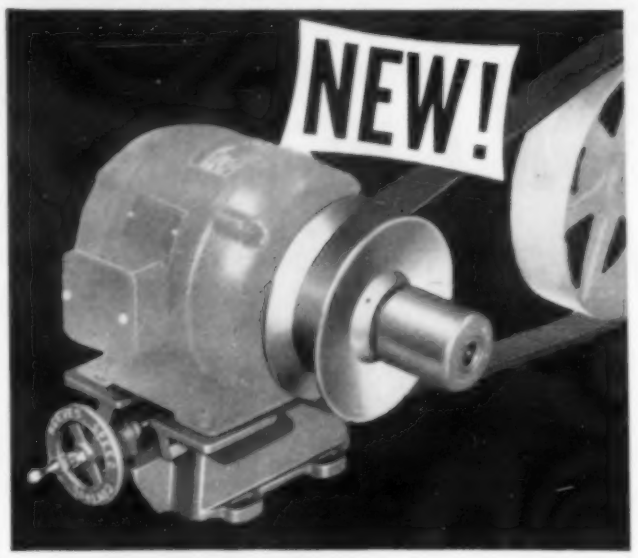
COMPACT—ACCURATE

13 different capacities from as low as 0-500 lbs. up to 0-100,000 lbs. Thousands in use. Instantly reads load applied by hoists, turnbuckles, air pistons, etc. Has max. pointer and attachment shackles. LOW in cost!

WRITE FOR CATALOG AND FREE TENSILE STRENGTH COMPUTER

W. C. DILLON & CO., INC. 14620K Keswick St., Van Nuys, Calif. (Suburb of Los Angeles)

If you write maker identify as **IEN - 6394**



REEVES *Completely new redesigned* MOTOR PULLEYS *Smaller units—More HP!*

Check all these new REEVES features

1. New, smaller disc assemblies—engineered for new or old NEMA Motors.
2. New spiral-groove lubrication for rust-free, trouble-free service.
3. One-point lubrication when unit is stopped *or in operation.*
4. Superior base construction for greater rigidity and strength, reduced vibration and noise.

Write today for complete details. **Specify IN10-V545.**

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

If you write maker identify as **IEN - 6395**

CALCULAGRAPH

figures elapsed time accurately

Reliable job time records are essential for compiling correct cost data, estimating reorders and checking on production efficiency. One sure way to secure accurate to the minute, dependable time costs is to use Calculagraph automatically-figured elapsed time records. Calculagraph gives you total elapsed time, starting and finishing time and date on a permanent, printed reference card. Eliminate losses due to inaccurate job time calculations by using Calculagraph to time your operations.

Write for full information today, to Dept. 300

CALCULAGRAPH COMPANY
SUSSEX STREET, HARRISON, NEW JERSEY

If you write maker identify as IEN - 6397

CUT COSTS

with

ALLEN *Punch Press*

1-Ton Power Bench Type

$97.50 less Motor

- Powerful
- Dependable
- Economical

FREE CIRCULAR

30-Day Money-Back Guarantee

Order TODAY.

Price $97.50 F.O.B., Clinton, Mo. (Includes motor bracket, V-belt, motor pulley, less motor)

For light work — stamping, forming, riveting—metal, fiber or other material.

Overall height 17½" . . . Base size 8½" x 8½" . . . Die bed 5½" x 8½" . . . Ram face 1½" x 3½" . . . Ram stroke ¾" . . . positive ¾" ram adjustment . . . sturdy, single pin, non-repeat hand lever clutch . . . V-belt drive . . . weight 105 lbs.

Requires only ¼ to ½ H.P. motor.

The machine of a thousand uses! Adequate for many types of work now done on large presses at greater expense.

ALVA F. ALLEN • Dept. IE • CLINTON, MO.

If you write maker identify as IEN - 6398

This is the way to

get things clean

...FAST...

at minimum labor cost

Contains amazing Kelite NU-RE-SOL*... Safe on Painted Surfaces... Built-in Scale Inhibitor... No odor, safe on skin and clothing... Exceptional "wetting-out" qualities.

*an exclusive Kelite development

"Click the switch" and start steam cleaning.

No skill needed. If water supply fails, burner and pump shut off automatically.

Rugged! No flimsy diaphragm here. Heavy duty piston pump with stainless steel ball check valves gives service you can bank on.

Here is the world's best combination for defeating dirt. A Kelite Steam Cleaner (with Kelite Formula 89) will safely clean a white sidewall tire... an earthmover... an oil well ...a truck body...a diesel engine...a canning machine. In mere minutes, and without previous experience, you—or anyone—can clean away heavy accumulations of muck or tenacious deposits. Why not see how easy and effective it is to clean the Kelite Way.

Just send for free illustrated Bulletin No. 128 today. Kelite Products, Inc. Home Office: 1250 North Main Street, Los Angeles 12, California

KELITE

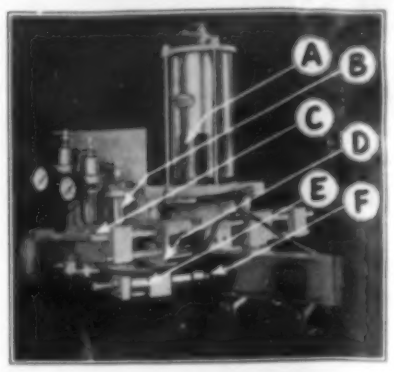
Offices in 98 Principal Cities and 16 Countries Abroad

PLANTS IN LOS ANGELES — BERKELEY HEIGHTS, N. J. CHICAGO — DALLAS — MEXICO CITY

If you write maker identify as IEN - 6400

LUBRICATING . . Automatic unit lubricates conveyor trolley bearings

Source: J. N. FAUVER COMPANY 51 W. Hancock Ave., Dept. IEN, Detroit 1, Mich.



Regulator controlled

Series 700 designates a new line of lubricators to inject grease or oil on one or both sides of a trolley type conveyor. The lubricator mounts on the trolley rail and is actuated by the moving conveyor.

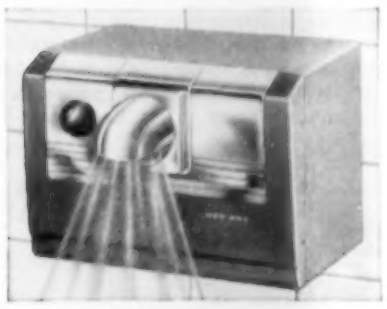
Each trolley hub engages the nozzle of the pumping unit as the trolley approches the lubricator and rides into contact with the lubricant fitting. The trolley carries the nozzle with it to receive a measured amount of lubricant under pressure when the nozzle is pointed straight at the bearing opening. The nozzle is carried slightly beyond the center position and then is released from the trolley to return to its pick-up position. The nozzle and grease fitting are tightly sealed at the instant the lubricant is discharged so there is no leakage.

Standard equipment includes a 12-lb. reservoir and an air control panel with a single pumping unit on each side of the rail. Operation is by compressed air from a plant source. Maximum delivery capacity is 0.1 cubic inch. The grease or oil is supplied from the reservoir at constant pressure by means of a follower located in the reservoir under air pressure just sufficient for a steady supply to the pumping units. Both pumping units swing free when their lubricating action is not required. The illustration shows the lubricant reservoir at A, the air control panel at B and C, the supporting frame at D, the cam locating nozzle at E and the booster cylinder at F.

If you write maker identify as IEN - 6401

WASH ROOMS . . Hot air blower replaces towels to dry hands and face

Source: MICHAEL ELECTRIC PRODUCTS CO. 15 Stiles St., Dept. IEN, New Haven 12, Conn.



Eliminates towels

Timer controlled blower motor and a 2,000-watt electric heating element are energized for a 30-sec. interval when a push button on the housing of this new Ozo-Dry Hurricane dryer is pressed. Heated air issues from a chromium plated swivel nozzle that can be turned to direct the flow up, down or to either side. At the same time, a Westinghouse Odorout Sterilamp adds its action. Assembly is in a steel housing that measures 9½ by 7 by 6¾ inches. Finish is metallic gray with chromium trim. List price is about $80.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6402

WHEN ARE TWO HEADS BETTER THAN ONE?

FLAT SPRING STEEL is constantly being purchased for completely new end uses. In most of these new applications the desired results are achieved. If, however, the Flat Spring Steel does not perform as hoped, the steel used may be unsuitable for the job, or something may be askew in the material's application.

That's when two heads can be better than one! Roebling is just about the nation's largest producer of High Carbon Flat Spring Steel...and Roebling laboratories are always glad to cooperate with manufacturers, designers and engineers who have a problem child. Send details to Wire and Cold Rolled Products Div., John A. Roebling's Sons Corp., Trenton 2, N. J.

A subsidiary of The Colorado Fuel & Iron Corporation

ROEBLING

If you write maker identify as IEN - 6403

Nose need DUST PROOFING ?

YOU NEED . . .

DUPOR No. 1

The miniature nose mask that is as handy as a pair of glasses. So light, less than 1 ounce. So convenient it can be worn while smoking, eating, talking. Amazing 9 sq. in. filter. Vest pocket size. Can be carried, ready for use instantly. Write for details! Send $1.20 today for sample!

H. S. COVER, SOUTH BEND, IND.

"Respirators for Industry since 1894"

If you write maker identify as IEN - 6404

Curtis Terminal Blocks Make Better Connections Economically— Quickly. A type for every purpose.

CURTIS Type "CDM" Blocks

Designed for General Purpose Applications

Factory Assembled 1 to 50 Terminals

Write for Bulletin DS-116.

Also ask about wide selection of other Curtis Blocks available.

An ideal terminal block where convenient, systematic wiring is desired and many terminals needed. The Curtis "CDM" will do much to eliminate waste space and save time in wiring. A white marker strip is provided for circuit identification. Conservatively rated at 30 amps. Recommended for use where temperatures do not exceed 150° F.

CURTIS DEVELOPMENT & MFG. CO.

3214 North 33rd Street, Milwaukee 16, Wisconsin

If you write maker identify as IEN - 6405

GETS AROUND TO ECONOMIZE

'Tugit' goes where the work is. It is light, compact, easy to handle and use in tight spots. Lifting and pulling are fast at any angle. Maintenance men, construction crews, railroad workers, linemen — all save time and money wherever 'Tugit' goes into action. Operation is smooth and safe. 'Tugit' is a powerful lever operated spur-geared hoist with automatic brake, super-tough chain, non-fracturing hooks and non-kicking handle. One-ton loads can be spotted with an accuracy of 3/32" at a time.

The versatility and economy of a 'Tugit' Hoist has been proved on thousands of jobs everywhere. Available in one and two-ton capacities — either size fits any tool box. Let your "Shaw-Box" Distributor give you full details or write us for Bulletin 388.

'TUGIT' HOISTS

MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN

Builders of "Shaw-Box" and 'Load Lifter' Cranes, 'Budgit' and 'Load Lifter' Hoists and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves, 'Consolidated' Safety and Relief Valves, 'American' and 'American-Microsen' Industrial Instruments, and Aircraft Products.

If you write maker identify as IEN - 6406

When you want Nylon Performance
with low tooling cost... design with
POLYPENCO ROD, STRIP, TUBING

APPLICATIONS: Bearings, Connectors, screws—rivets, Coil forms, Gears, Rollers, Thrust washers, Valve seals, Wearing surfaces, Insulators
CHARACTERISTICS: Abrasion resistance, Electrical insulation, Light weight, Heat resistance, Quiet operation, Toughness, Resilience, Low coefficients of friction

You can fabricate parts readily (drill, tap, thread, turn, mill, blank) from standard shapes of POLYPENCO nylon on standard shop equipment. This keeps tooling cost low and makes nylon economical without costly tooling. Call on us for engineering help. We will tell you if nylon is practical for the application, how to fabricate it—or we will fabricate it for you. Write for prices or technical data.

POLYPENCO NYLON
nylon and teflon* / stock shapes, finished parts
also available to your specifications
The POLYMER CORPORATION of Penna. • Reading, Penna.
In Canada: Polypenco, Inc., 2052 St. Catherine, W., Montreal, P. Q.
*registered trademark of the Du Pont Company

If you write maker identify as IEN - 6407

★ positive, DROP-TIGHT shut-off
★ instant STICK-PROOF operation
built-in features of HOMESTEAD Lever Seald VALVES

Wherever you have corrosive, erosive, viscous, or volatile hard-to-hold fluids, those are the jobs on which you want to use Homestead Lever-Seald Valves. The powerful lever and screw device built into each valve, firmly seats the valve or relieves seating pressure just enough to overcome friction and allow the plug to turn easily.

That's why Lever-Seald Homestead Plug Valves cannot stick or seize; and also why they afford positive shut-off under all conditions. Protection of all vital operating parts and sealing surfaces from corrosive or erosive effects of line fluids is further guarantee of their long service life and extremely low maintenance.

Homestead Lever-Seald Valves are cast in semi-steel, steel, stainless, bronze, or other specified metals; sizes 1½" to 12" for pressures up to 1500 pounds.

Send for details and copy of VALVE REFERENCE BOOK No. 39-3.

HOMESTEAD VALVE MANUFACTURING COMPANY
P. O. Box 85 "Serving Since 1892" Coraopolis, Pa.

If you write maker identify as IEN - 6408

Got a Minute? Got a Penny?

That's all you need to CUT A KEYWAY with a du MONT *Minute Man*® BROACH

— any keyway from 1/16" to 1" in any bore from ¼" to 3" — by hand with arbor press, when you're equipped with Minute Man Keyway Broach Kits.

To Cut Keyway Cutting Cost, Cut This Coupon

The du MONT CORPORATION, Greenfield, Mass.
MAIL KEYWAY BROACH CATALOG & PRICE LIST N to
Name .....
Company .....
Address .....

USEFUL INFORMATION—*Concluded*

If you write maker identify as IEN - 6409

STAPLING . . Trouble shooting chart shows points to check on a stapling machine

Acme Steel Co.
2840 Archer Ave., Dept. IEN, Chicago 8, Ill.

Letter-size card, perforated for mounting and plastic coated to withstand handling, is offered by the company to assist in maintenance of a stapling or wire-stitching machine. It carries an illustrated check list on five points of adjustment and a second illustrated list of defective staples with causes and remedies. Ask for Chart AD-154.

If you write maker identify as IEN - 6410

TIN . . Uses for the metal are described in new 24-page picture book

Malayan Tin Bureau
1028 Connecticut Ave., Dept. IEN, Washington 6, D. C.

"Straits Tin" tells sources of supply for tin, properties, how it is mined in Malaya, along with illustrations of principal steps. It then describes use of tin for containers, plating, solders, bearings, alloys, chemicals.

If you write maker identify as IEN - 6411

WELDING . . Pocket safety booklet describes procedures for gas and arc welding

Air Reduction Sales Co.
60 E. 42nd St., Dept. IEN, New York 17, N. Y.

"Safety" is both title and subject of new 32-page booklet intended for the operator of oxy-acetylene welding and cutting equipment and arc-welding equipment. It covers topics such as personal safety, cylinder maintenance, setting up and shutting down, fire prevention, watching for trouble.

If you write maker identify as IEN - 6412

WELDING . . Illustrated wall chart lists resistance welding electrodes and accessories

Ampco Metal Inc.
1745 S. 38th St., Dept. IEN, Milwaukee 46, Wis.

Ten pictures and nine data tables are presented by new Ampco-Weld wall chart, 20½ by 29½ inches, on resistance welding products. Pictures show tips, holders, wheels, shafts, backups. Tables include RWMS specifications on spotwelding similar metals, projection welding data, alloy properties.

If you write maker identify as IEN - 6413

WINDING . . Textbook of 140 pages on coil winding machinery and winding methods

Geo. Stevens Mfg. Co.
Pulaski Road at Peterson, Dept. IEN, Chicago 30, Ill.

Four chapters in new book, "Coil Winding", deal with four basic types of winding. These are single layer, multi-layer or bobbin, universal and progressive universal windings. How to arrange the winding machine for each type is described, along with suggestions on bench layout, handling specific problems, gear tables, winding formulae. List price is $6.50.

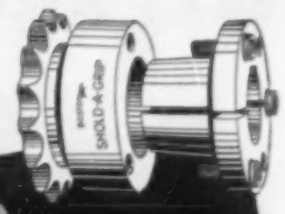
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6414

For specifications and prices on the complete line of Ballymore Safety Step Ladders, send for free catalog. Ballymore Company, Wayne 4, Pa.
Ballymore SAFETY LADDERS
BALLYMORE SAFETY STEP LADDERS

If you write maker identify as IEN - 6415

How cost-wise buyers rate
INTERCHANGEABLE TAPERED
BUSHINGS and SPROCKETS



GOOD BETTER ✓ BOSTON *Gear*
SHOLD-A-GRIP
ELIMINATES RE-BORING
Fit all common sprocket sizes to broader range of shaft sizes

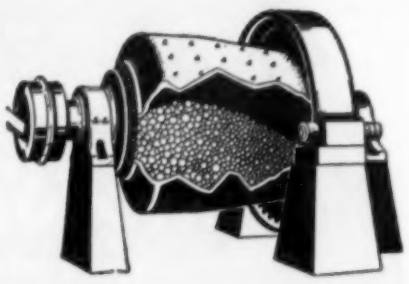
IN STOCK AT 92 BOSTON *Gear* DISTRIBUTORS at Factory Prices

Look under "Gears" in the Yellow Classified Section of your Telephone Directory for the one nearest you.

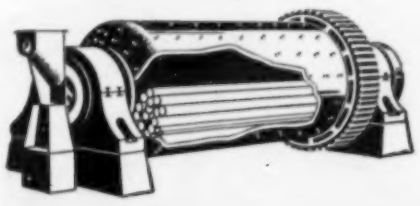
Get Sprocket Catalog Supplement SC-2, and handy SHOLD-A-GRIP Selection Chart. Saves time and trouble in drive assembly and maintenance. Ask your BOSTON Gear Distributor, or write: Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

If you write maker identify as IEN - 6416

GRINDING MILLS *for all applications*



- CONICAL MILLS
- CYLINDRICAL MILLS
- TRICONE MILLS
- TUBE MILLS
- ROD MILLS
- BATCH MILLS

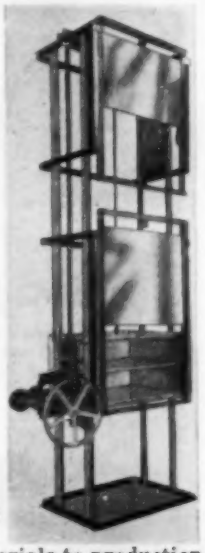


Write for Bulletin AH-440-38

HARDINGE COMPANY, INCORPORATED
YORK, PENNSYLVANIA • 240 Arch St. • Main Office and Works
New York • Toronto • Chicago • Hibbing • Houston • Salt Lake City • San Francisco

If you write maker identify as IEN - 6417

Electric or Hand Powered MATOT DUMB WAITERS



- Save Time
- Save Labor
- Relieve Elevators

Speed parts and materials to production lines . . . finished products to storage or shipping areas . . . with Matot "not-so-dumb" Dumb Waiters.
Matot Dumb Waiters take up little room . . . involve only light construction . . . and can be either hand or power operated . . . Speed reducers, magnetic brakes . . . Galvanized or stainless steel cabs.

D. A. MATOT
See Sweets Catalog File— or write for FREE literature.

D. A. MATOT, Inc.
1533 ALTGELD STREET • CHICAGO 14, ILLINOIS

If you write maker identify as IEN - 6418

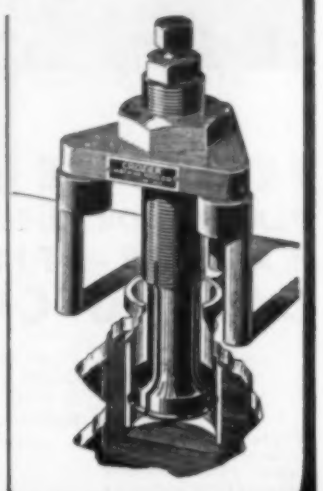
NEW EXTRACTOR

removes bushings from blind holes

...cuts time 75 per cent

The entirely new method of extracting bushings, bearings, sleeves, liners, etc. Eliminates necessity for machining, minimizes the hazard of injury to casings or excessive dismantling of equipment, handles holes from ½ to 2" – over 5 tons have been extracted with unit. Eliminates as much as 75 per cent of labor and time, slashes inventory.

For complete information write Department IEN-6.



CROZIER *Machine Tool Co.*

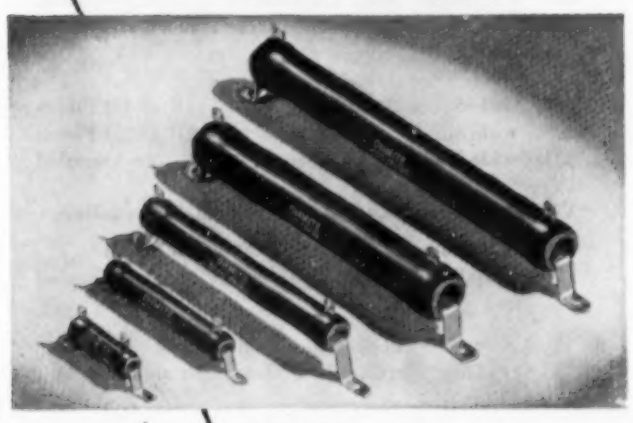
684 NO. PRAIRIE AVENUE, HAWTHORNE, CALIFORNIA

If you write maker identify as IEN - 6419

NOW...ALL

OHMITE®

WIRE-WOUND RESISTORS



HAVE

WELDED TERMINALS

Here is the ultimate in resistor *stability*. These Ohmite resistors have patented welded terminals—providing perfect (and permanent) electrical connections between wire and lug ...an extremely important feature in eliminating noise and instability in sensitive circuits. Furthermore, these connections are not affected by vibration and high temperature.

The terminals are made of a special high-strength alloy whose coefficient of expansion is properly related to that of the other resistor materials. This keeps terminals anchored and prevents cracking.

Millions of these resistors have proved their reliability in the toughest kind of service.

WRITE on Company Letterhead for Catalog No. 40

OHMITE MANUFACTURING CO.
3619 Howard St., Skokie, Ill.
(Suburb of Chicago)

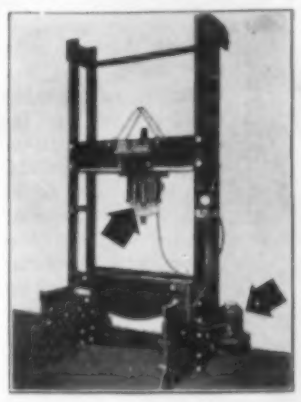
Be Right with **OHMITE®**

RHEOSTATS • RESISTORS • TAP SWITCHES

If you write maker identify as IEN - 6421

PRESS .. Power hydraulic assembly based on company's push-pull jack

Source: OWATONNA TOOL CO.
371 N. Cedar St., Dept. IEN, Owatonna, Minn.



Rates 100 ton

The Power-Twin 100-ton push-pull unit, with its center-hole ram and a motor driven pump, operate as the power equipment in this new 100 ton press. The complete unit mounts removably in the upper head. It, in turn, can be adjusted on the upright after removing four pins, repositioning the head and replacing the pins in holes provided for this purpose. The bolster rails can be picked up on four wheels by operating a cam. Then the complete rail assembly can be rolled to the front of the base clear of the columns. Control centers at a lever operated valve. A gage shows pressure in the hydraulic line.

The ram mounts an 18-in. adjusting screw. It can be set in any position in an 8-in. range. There is 5 in. of power travel with spring return. The head adjustment provides for minimum clearance of 13½ in. and maximum at 61 inches.

If you write maker identify as IEN - 6422

PAINTING .. Rubber base paint particularly to protect concrete floors

Source: PENINSULAR CHEMICAL PRODUCTS CO.
6795 E. 9-Mile Road, Dept. IEN, Van Dyke, Mich.

Wears well, stops dusting

Pen-Kote "51" is a new rubber base paint that is resistant to attack by most chemicals, oils, greases, gases, moisture. It dries quickly, following application, to present a durable surface that adheres tightly and improves appearance. Six colors include black, blue, green, gray, red, yellow.

If you write maker identify as IEN - 6423

EXTINGUISHING .. Three wheel truck to carry equipment and two firemen

Source: KALAMAZOO MFG. COMPANY
1827 Reed St., Dept. IEN, Kalamazoo, Mich.

Gets there quickly

Fire Fighter is a new three-wheel engine driven truck that can be operated through narrow aisles and standard doors at speeds to 15 miles per hour. The truck can be equipped to carry high pressure fog apparatus, 210 gal. of water, 100 ft. of booster hose, a rotary pump, from concentrate, extinguishers, fire axes, crow bars, first aid kits and ladders.

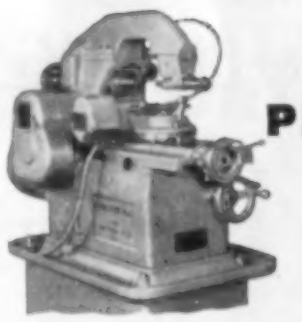
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6424

If you write maker identify as IEN - 6425

5416

CUT COST of PRECISION gear PRODUCTION



THIS FACT has been demonstrated time and time *again*

If you produce small, fine pitch, precision gears, up to 6" O.D. of the gear blank, use of the Hamilton Precision Gear Hobber will enable you to attain more gear precision with no sacrifice in gear production, or increased gear production with no sacrifice in gear precision . . . or both!

WANT FACTS?

Write for Hamilton Bulletin No. 5416.
Address The Hamilton Tool Company
905 Hanover Street,
Hamilton, Ohio.

IT'S A *Hamilton Tool*

USE IT WITH CONFIDENCE

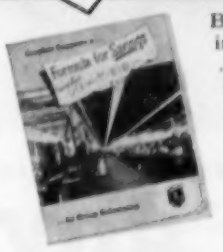
If you write maker identify as IEN - 6426

GE LAMPS

...via Graybar

There's no substitute for proper lighting... just as there's no substitute for dependable fluorescent and incandescent lamps made by General Electric and distributed by Graybar. For any lamp or lighting need, call your nearby Graybar office – they'll be glad to serve you.

FREE...Booklet gives formula for savings through group relamping



Booklet compares cost of Group Relamping with old-fashioned spot replacement ...shows how you can save 60% or more in relamping labor costs right from the start. Send for your copy of "Formula for Savings" – a helpful guide to estimating savings in your plant. *Graybar Electric Company, Inc. Executive Offices: Graybar Building, 420 Lexington Avenue, New York 17, N. Y.*

386-126

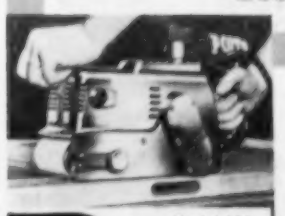
Call Graybar *first* for . . . Everything Electrical GraybaR ELECTRIC COMPANY

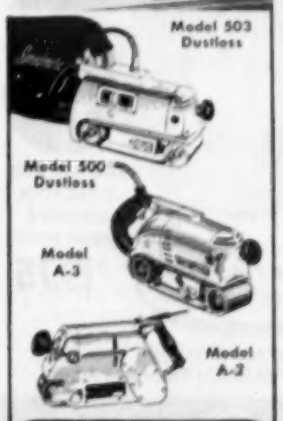
If you write maker identify as IEN - 6427

Which of these

BELT Sanders

best fits your needs?





For production surfacing your best bet is Model 503. Powerful vacuum system. Rugged—does the rough sanding jobs formerly handled by heavier, more expensive machines.

For heavy-duty sanding you can't beat Model 500. 4"-belt makes quick work of broad, flat surfaces. Vacuum bag eliminates flying dust.

For all-purpose sanding take Model A-3. Speedy, versatile, easiest to use for chamfering and rounding edges; surfacing wood, metal, composition, etc.

For light touch-up choose Model A-2. It's 9-lb. weight and 2"-wide belt help you develop easily the necessary deftness for super-fine finishing or light stock removal.

Send for free catalog giving full information

PORTER-CABLE MACHINE CO.
2206 N. Salina St., Syracuse 8, N.Y.

Porter-Cable *Quality Electric Tools*

If you write maker identify as IEN - 6428

...here's the WHEEL they're ALL talking about ...and BUYING!

DICO -HD-
Heavy Duty Industrial Wheel

- PRESSED STEEL—INDESTRUCTIBLE
- "WELDED-IN" STEEL HUB
- ROLLER BEARING IN PLANISH SLEEVE
- EASY-ROLLING "MOLDED-ON" TIRES
- LIGHT AND STRONG

PUT ALL YOUR WHEEL PROBLEMS UP TO DICO!

Write for complete Wheel Catalog

DICO — DES MOINES 5, IOWA

If you write maker identify as IEN - 6429

Generalift Pallet Boxes CUT HANDLING and STORAGE COSTS 50%

Send for free booklet

ENGINEERED CONTAINERS FOR EVERY SHIPPING NEED

General Box

1815 Miner Street, Des Plaines, Illinois

★ ★ ★ ★ ★

If you write maker identify as IEN - 6430

Take the GLARE out of Micrometer Reading with the "Lustro-Chrome" MICROMETER

MEASURE TO 1/10,000 th

ALL GRADUATIONS ARE WELL-DEFINED BLACK LINES ON DULL CHROME SURFACE WHICH MEANS EASIER AND SURER READING, EVEN IN POOR LIGHT.

GUARANTEED ACCURATE WITHIN ONE HALF OF A TEN THOUSANDTH OF AN INCH.

THE CHROME SURFACE IS EXTREMELY HARD AND NON-PEELING. IT PROTECTS THE TOOL INDEFINITELY FROM RUST AND DISCOLORATION.

DROP-FORGED MODEL WITH CHROME FINISHED MICROMETER HEAD, 10th VERNIER, FROM $9.25 UP.

No. 901 C 0-1" size with LOCK NUT and RATCHET and 10th vernier as shown $13.25

This tool with TUNGSTEN CARBIDE tipped anvils $15.75

Dealers! Here's a real profitable line

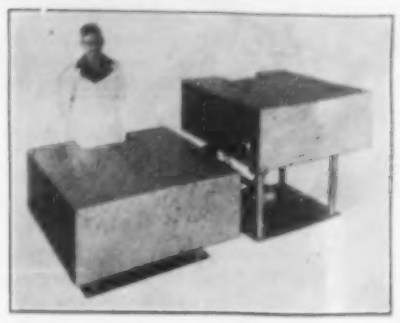
ASK FOR CATALOG ON OUR COMPLETE LINE OF MICROMETERS IN ALL SIZES.

GEO. SCHERR CO., INC.
COMPLETE LINE OF PRECISION INSTRUMENTS
200 -EN LAFAYETTE STREET • NEW YORK 12, N. Y.

If you write maker identify as IEN - 6431

ELEVATOR . . Motor driven table mounts in floor, raises and lowers load

Source: HAMILTON TOOL CO.
905 Hanover St., Dept. IEN, Hamilton, Ohio



Bulletin PS-54

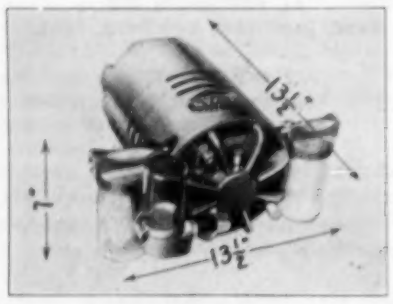
Pack Lifter is a new mechanical motor operated lift table designed for pit installation to handle a load of 2,200 pounds. The table rises to 16 in. from floor level at a speed of 27½ inches per minute. An apron extends downward on four sides. It stops 1 in. below floor level when the table top is at maximum height. An 8 by 18 in. cut out is located in the center of one long side at the point where the operator stands.

Drive is by a ¾ hp. motor with a reversing push button controlled magnetic starter. A limit switch prevents over-travel. Power is transmitted through a worm, worm gear and screw in "non-overtaking" design. Principal application is in bringing work up to feed level to serve a machine.

If you write maker identify as IEN - 6432

PUMP . . Vane type rotary for 28 in. vacuum or 20 lb. pressure

Source: LEIMAN BROS. INCORPORATED
102 Christie St., Dept. IEN, Newark 5, N. J.



Bulletin 21554

Model K is a unit assembly of ball bearing motor and rotary pump with a cast iron housing and rotor and two steel blades. The blades are equipped with the company's automatic adjuster to keep them in contact for pumping action in continuous duty. The ball bearings are grease lubricated. The pump also is fitted with the company's patented E113 lubricator that requires filling once in 60 to 80 hours.

Displacement is 3.6 cfm. and overall dimensions are 13½ by 13½ by 7 inches. Equipment includes an inlet filter and an outlet separator in addition to the automatic oiler. The motor rates ¼ hp. It drives a fan as well as the pump. Operation is free from noise. Finish is in gray enamel.

If you write maker identify as IEN - 6433

Anaconda Hy-Therm trade names a brand of copper in which minute amounts of hardening agent have been added to pure electrolytic copper. The material has been in limited supply in the form of bare and weatherproof conductors. Now it is available in unlimited supply from Anaconda Wire and Cable Co., 25 Broadway, Dept. IEN, New York 4, N. Y. It is characterized by its resistance to annealing and is particularly for overhead transmission and distribution lines.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6434

A PAID NEWS ADVERTISEMENT BY THE CARBORUNDUM COMPANY

SAND SCREEN—NEW ABRASIVE CLOTH

Use both sides...do 7 to 15 times more sanding per sheet or disc

SAND SCREEN, new open-mesh abrasive cloth by CARBORUNDUM for sanding and finishing, lets the removed material flow right through—instead of loading and glazing as conventional abrasive paper and cloth do. You use *both* sides, for each is uniformly coated with CARBORUNDUM's famous hard, sharp silicon carbide abrasive grain. Lasts from 7 to 15 times longer...gives fast, easy sanding on metal, wood, paint undercoats and sealers. Use it wet or dry...by hand or machine.

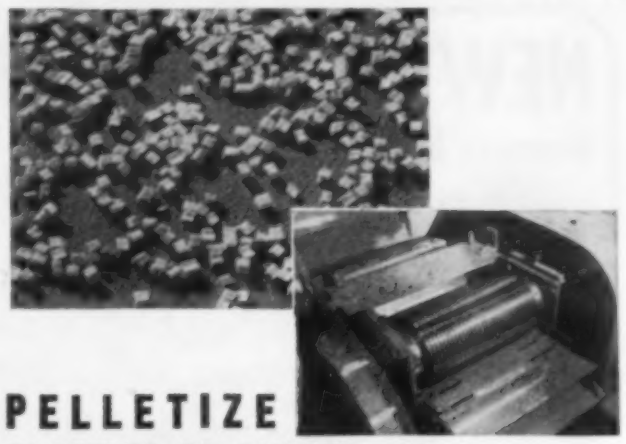
SAND SCREEN is available in full sheets, cut sheets and discs—in 180 and finer grit sizes. For hand sanding, full 9" x 11" sheets fold like paper, tear like cloth to any width you desire. Cut sheets fit your air or electric oscillating or vibrating sanders. SAND SCREEN Discs give best results when used wet with CARBORUNDUM'S FASTCUT Pad Assembly. Ordinarily, no adhesive is required when sanding flats or slight contours ...the surface of the FASTCUT Pad holds the disc in place.

If you have any sanding and finishing operations where loading and glazing of your present abrasive is a problem—or where considerably less loading would help speed production, it will pay you to investigate SAND SCREEN. Your CARBORUNDUM Salesman or Distributor (listed in the yellow pages under "Abrasives" and "Grinding Wheels") will work closely with you to help you take full advantage of its many cost-cutting features. Call him—or, if you prefer, use the inquiry form provided by this publication; or write to **The Carborundum Company,** Dept. IEN 82-47, Niagara Falls, New York.

"Carborundum", "Sand Screen" and "Fastcut" are trademarks of The Carborundum Company, Niagara Falls, New York

82-47

If you write maker identify as IEN - 6435



PELLETIZE PLASTICS OR RUBBER with TAYLOR-STILES DICING CUTTER

In a single straight-line operation this dicing cutter slits and cross-cuts sheets of stock into uniform pieces for further processing.

Write for folder describing this and other Taylor-Stiles cutters for cutting various types of plastics and rubber.

—without fines
—without dust
—without longs

TAYLOR-STILES and Company — CUTTING MACHINES & KNIVES

44 Bridge Street
Riegelsville, New Jersey

If you write maker identify as IEN - 6436

FOR all those interested in extremely thin stainless steel sheet and strip . .

VERI-THIN *MicroRold*

The Washington Steel Corporation is now producing Veri-Thin MicroRold stainless steel sheet and strip, available in 18-8 grades as follows:

36" wide Sheets	.006" to .009"	2B or 2D Finish
30" wide Sheets	.004" to .009"	2B or 2D Finish
23 1/16" wide Max.	.0015" to .009"	Bright Annealed

Veri-Thin MicroRold Type 430 is available as follows:

30" and 36" widths	.009"	2B Finish
23 1/16" wide Max.	.0015" to .009"	Bright Annealed

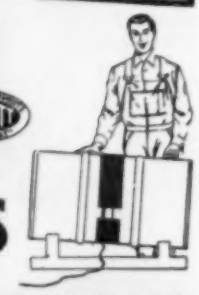
Ask your steel warehouse distributor about Veri-Thin MicroRold stainless sheet and strip

WASHINGTON STEEL CORPORATION
WASHINGTON, PENNSYLVANIA

If you write maker identify as IEN - 6437

SPEED UP SLOW-FLOW MATERIALS

TARS
PLASTICIZERS
WAXES
MOLASSES
GLUES
RESINS
GREASES
GUMS . . ETC.



ACRAWATT ELECTRIC
DRUM HEATERS
FIT ALL STANDARD 22¼" DRUMS

- Proven Acrawatt THINSTRIP Construction.
- 3 Heats: 3000 Watts 230 Volts.
- Fast Heat Transfer.
- Aluminized Steel Encased.
- Enclosed Wiring Terminals.
- Low Radiant Loss.
- Fully Insulated.
- Easy to Install and Remove.

Kill time-consuming, costly slow-flow of viscous materials. Slip one or more Acrawatt Drum Heaters on your drums. Make cloggy, sluggish contents get a move on. Go on and off in a jiffy. Safe and simple to apply and operate. Use singly or in multiple. Save with Acrawatt reliability, long life ruggedness and efficiency. Order today.

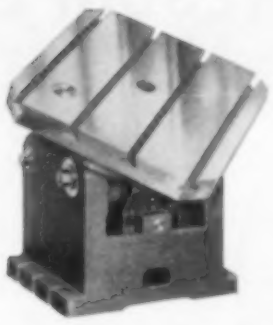
ORDER NOW
EA. $19.50 F.O.B. CHICAGO
Spot Shipment
Shipping Wgt. 10 Lbs.

FOR BETTER ELECTRIC HEATERS AT BETTER PRICES, LET US QUOTE

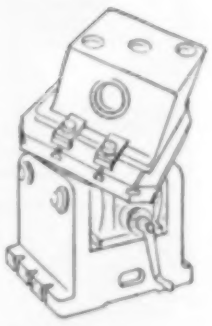
ACRA ELECTRIC CORPORATION
9905 PACIFIC AVENUE • FRANKLIN PARK, ILLINOIS

If you write maker identify as IEN - 6438

universal tables



save up to 50% of set up time on radials and boring mills



With one set up on Cincinnati Gilbert universal tables, you can drill at any angle up to 90° on five sides of a cube. Special feature: four-point support of the work in the lowered position takes strain off the worm, provides greatest possible rigidity of the work, best insurance of accuracy. Table sizes: 22" and 27" square. Height: 22". Four ¾" tee slots. Write for Bulletin 850.

THE CINCINNATI **GILBERT** MACHINE TOOL COMPANY
3366 BEEKMAN ST. • CINCINNATI 23, OHIO

RADIALS
BORING MILLS
ACCESSORIES

If you write maker identify as IEN - 6439

Designed for Speed • Precision • Compactness

The AIR CYLINDER

with the *Built-in Valve*

Air engineers agree: the closer the valve to the cylinder, the more efficient is air cylinder operation. In the Bellows Air Motor the valve, and all operating controls, are an integral part of the cylinder itself.

This built-in construction means quicker action, more positive response, surer control, and more economical operation. Built-in construction means compactness, simplified installation, minimum maintenance.

The Bellows Air Motor is made in five bore sizes: 1¼", 1¾", 2½", 3⅝" and 4½", and in any stroke length. You have your choice of a wide range of built-in valve assemblies: low or high voltage electrically controlled operation; standard or explosion proof; momentary air exhaust or maintained air pressure pilot valve operation; or mechanical operation for manual or direct-linked control. Whatever your pneumatic valving requirements there is a Bellows Air Motor with **built-in** valve to meet your needs. Wide range of mounting styles.

New Bulletin Write for this free new 36-page booklet. Dimensional specifications, technical data, wiring diagrams, case history studies, production and cost data. Address: Dept. IEN-654, The Bellows Co., Akron 9, Ohio. Ask for Bulletin CL-50.

The Bellows Co.
AKRON 9, OHIO

"Controlled Air Power"

700A

FOR FASTER, SAFER, BETTER PRODUCTION

If you write maker identify as IEN - 6441

METER . . Hook-on instrument to measure both voltage and current

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Fits in a pocket

Three ranges of ac. voltage are 150, 300 and 750 volts in this new Type AK-5 voltammeter. Five current ranges are between 5 and 350 amperes. The meter clamps around conductors measuring to 2 in. in diameter. A trigger on the housing is depressed to open the unit for application. Insulation prevents grounding or short circuiting.

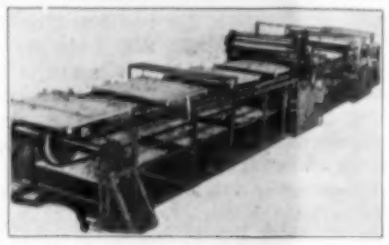
Range and scale are selected by turning a switch knob at the base of the housing. Current scales are marked black and voltage scales are red for positive identification. Assembly is in a shock resistant housing. Voltage leads thread into position. Weight is 1¼ pounds. Dimensions are about 9 by 3½ by 1½ inches.

In addition to reading current and voltage, the instrument can be employed to assist in balancing circuits, in tracing faults and grounds, in checking operation difficulties.

If you write maker identify as IEN - 6442

PACKAGING . . Assembling machine makes pads for cardboard containers

Source: KENNETH J. MOORE & COMPANY
1778 W. Estes Ave., Dept. IEN, Chicago 26, Ill.



Takes 4 to 5 operators

Conveyor chain, beneath the horizontal track equipped top of this new Padded Tray machine, rides in a closed loop with a 1½ or 2-hp. driving motor. The chain carries a set of cars or work plates, measuring 40 by 40 in., on which operators place preformed pads and double faced corrugated sheets. The machine applies adhesive at a roller station prior to placing the sheet. It then carries the pad and sheet beneath a belt compressor station where the adhesive is set as the work carrying trays move forward. Eighteen trays are in steady motion along the top of the machine to produce completed pads at a maximum rate of 11 per minute.

The coating station and the pressure station heights can be adjusted between ¾ and 6¾ in. above the tray surface. The trays can be arranged to take various shapes of pads, pre-cut and laminated on a machine built for this purpose. The assembling machine occupies a floor space measuring 6 by 42 ft., with additional sections available depending on the pad design and size. A standard assembly with one coating station lists at $14,500. A second coating station for a double faced pad adds $4,500 and 12 additional feet of floor space.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6443

A PAID NEWS ADVERTISEMENT BY WEST DISINFECTING CO.

FREE INSECT CONTROL MANUAL

Explains Modern Insecticides

This valuable 36-page booklet covers every phase of controlling industrial and institutional insect infestation, from identification of insects to choice of the best insecticide and best type dispensing equipment for each insect problem. Sixty of the worst insect offenders are pictured, with data on habitat, kind of damage, identifying characteristics, life stages and cycles, reproduction rate, special characteristics, and best methods of control.

The booklet is packed with facts and information gathered during years of laboratory and field work by the specialists of the West Disinfecting Company. It tells how any building can be made virtually insect-free at extremely low cost by today's more efficient methods and products.

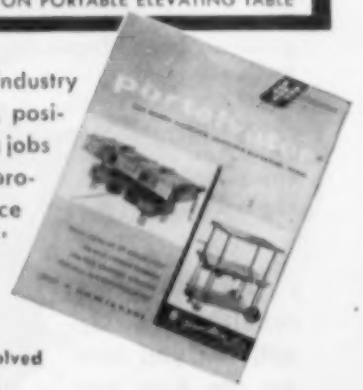
Read casually, this book is an education. Read more closely, it can be a powerful tool for increasing efficiency and savings in any plant with an insect problem. Published by the West Disinfecting Company, Dept. 13, 42-16 West Street, Long Island City 1, N. Y.

If you write maker identify as IEN - 6444

NOW—A FREE BULLETIN

5423

Tells HOW SPECIAL **PORTELVATOR**®
THE HANDY HAMILTON PORTABLE ELEVATING TABLE



● is used throughout industry to do the heavy lifting, positioning, and transporting jobs which have harassed production executives since the word "production" assumed its present meaning.

Find out how others have solved problems parallel to yours.

WRITE FOR FREE BULLETIN 5423

ADDRESS THE HAMILTON TOOL COMPANY
905 HANOVER STREET, HAMILTON, OHIO

IT'S A *Hamilton Tool*
USE IT WITH CONFIDENCE

If you write maker identify as IEN - 6445

Toolroom Favorite:

CONTINENTAL COUNTERBORE SETS

Set No. 1 for Counterboring, Spot-facing, and Countersinking.

CTW

Save time—save money with this wide variety of counterbores, countersinks and pilots, compactly boxed. Continental's Indestructible Drive won't stick, won't break, easily hand-detachable. THREE SETS AVAILABLE, for large or small toolrooms. Order from your local Ex-Cell-O representative—or write to Continental for catalog.

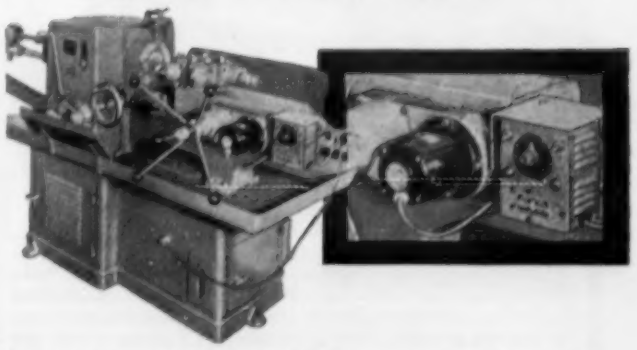
CONTINENTAL TOOL WORKS
Division of Ex-Cell-O Corporation
Detroit 32, Michigan

54-11

If you write maker identify as IEN - 6446

OSTER No. 601 "RAPIDUCTION"

Now Ready to Produce MORE at LESS Cost!



The Oster No. 601 Rapiduction, a simplified bar and chucking machine, is now equipped with electric-powered carriage feed to give you *higher* production at *lower* cost. A complete packaged unit, power feed is also ready for quick, easy installation on your 601 machines now in use.

Write us for complete information, and the name of your nearest Oster "Rapiduction" Distributor.

THE OSTER MANUFACTURING CO.
Main Office and Factory:
2053 East 61st St. • Cleveland 3, Ohio

Builders of High Quality Metal-Working Machinery Since 1893

If you write maker identify as IEN - 6447

Your kind of . . .

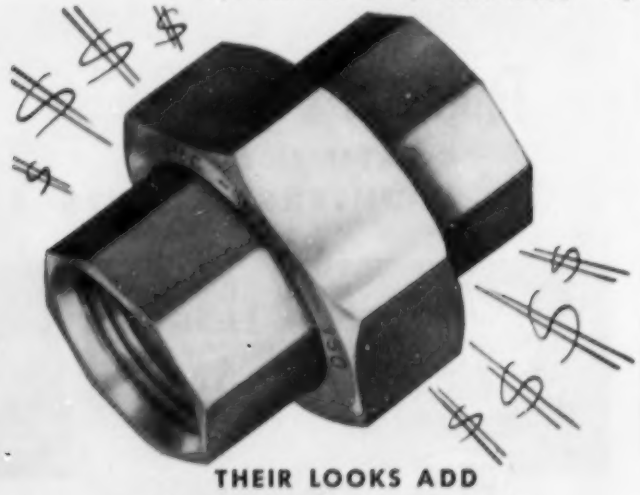
Solenoid Valves

There *IS* something better in solenoid valves—the new Marsh Electrimatic. Bodies machined from solid brass stock mean extra strength, greater dependability. Coils are moisture and frost proof. Valves are tight seating, smooth, positive, quiet. Types for wide range of application: direct acting —or pilot operated for large capacity.

. . . Outline your conditions and we will tell you how we can help you with your Solenoid problems.

MARSH INSTRUMENT CO.
Sales affiliate of Jas. P. Marsh Corp.
Dept. A, SKOKIE, ILL.
Export Dept., 155 E. 44th St., New York, N.Y.

If you write maker identify as IEN - 6448



THEIR LOOKS ADD

SHOWROOM "SELL"!

PIC STEEL UNIONS

Preferred for Original Equipment

Because of their smart brightness, Pics help the sale — never hinder it. Ends consist of tough, steel pipe coupling stock — with uniform flat sides for speedy installing with open end wrenches. Special wedge type bronze seat assures a tight closure *always*. All steel surfaces, even threads are zinc plated to prevent rust. Ask for Pic, the union for 150 lb. service that costs *less* than a galvanized, no more than a black malleable union.

Write for Free Samples!

DART UNION COMPANY, 130 Thurbers Ave., Providence, R. I.

If you write maker identify as IEN - 6449

NOW! CUT YOUR CURRENT COSTS . . . BOOST LAMP LIFE, WITH

LUSTRA GOLD-TONE FLUORESCENT STARTERS

YOU'LL MAKE BIG SAVINGS in the maintenance and operation of your fluorescent installations . . . with Lustra Gold-Tone Starters. These positive-action starters instantly cut out any lamp that begins to flicker or fail . . . prevent burn-outs . . . save wasted power.

Lustra Gold-Tone Fluorescent Starters come in Push-button Reset and Automatic Reset types—both guaranteed for two years of burning service. They are ideal companions for **Lustra Double Duty Fluorescent Lamps** which are famous for their better diffusion, color constancy, and *maintained* high light output . . . Write for full information. **Lustra Corporation, Dept. P-6, 36 Washington Street, Brooklyn 1, N. Y.**

Lustra
AMERICA'S DATED LAMPS

DOUBLE DUTY REFLECTOR LAMPS, INCANDESCENT LAMPS, FLUORESCENT TUBES, SPOTLITES AND FLOODLITES, RUGGED DUTY LAMPS, FLUORESCENT FIXTURES AND STARTERS

If you write maker identify as IEN - 6450

TRUCK . . Two wheel hand design to handle appliances on stairways

Source: FAIRBANKS COMPANY
393 Lafayette St., Dept. IEN, New York 3, N. Y.

Patents pending

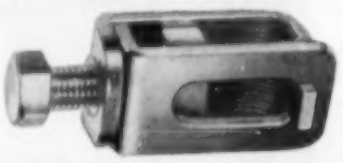
An appliance secured on this new Stairmaster truck can be "walked" up and down a stairway without bumping and without danger of scratching or marking. The load is taken by the stair treads on assemblies of multiple rubber rockers that pass the load from one rocker to the next as the truck moves along. The rockers themselves are a neutral color that will not mar or mark the steps.

The load is held in place by a wheel tightened belt and locking device which rolls the belt up out of the way when it is not in use. The truck is made with a tubular steel frame sheathed in non-marking rubber bumper stock and felt lined on its nose plate. Handle length is 58 inches. Nose width is 24 inches. Frame width is 16 inches. Nose length is 4 inches. The two wheels measure 5 in. in diameter and are tangent with the rubber rockers. Truck weight is 35 pounds.

If you write maker identify as IEN - 6451

CONNECTOR . . Galvanized clamp to tap an existing electric circuit

Source: IDEAL INDUSTRIES INC.
1108 Park Ave., Dept. IEN, Sycamore, Ill.

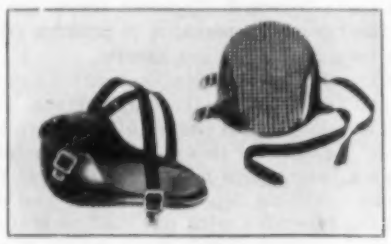


Patent Pending

Three sizes are available in this new tap connector to handle two No. 1 or one No. 8 and one No. 14 wire. Pressure is applied between a pad and stirrup by turning a hexagon head set screw to force the tap circuit wire into intimate contact with the main circuit, after its insulation has been stripped for a required length. The operator can see the connection that is being made through side openings in the unit. There are no separate loose pieces. Construction is in cold finished steel, hot zinc dipped.

If you write maker identify as IEN - 6452

Help for the worker who must kneel down is provided by a new adjustable rubber knee pad. It has a slip-proof surface. The sponge rubber body is soft and comfortable. General Scientific Equipment Co., 2700 W. Huntingdon St., Dept. IEN, Philadelphia 32, Pa., is the source.

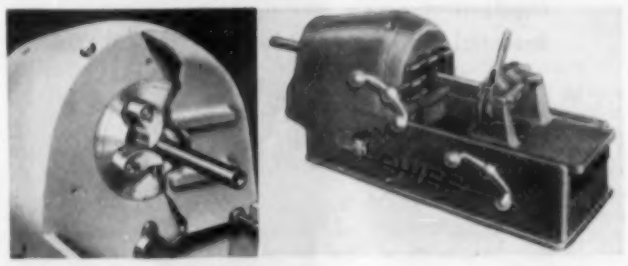


All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6453

First Choice in America's Most Competitive Building Market,

CHIEF WITH AUTOMATIC CHUCK IS WORLD'S FASTEST PIPE THREADER



Plumbing contractors use more Chief's than all other pipe threaders and cutters combined in Southern California, America's most competitive building market.

Why? Because you can thread, cut, and ream a piece of pipe before you are able to chuck it with any other kind of equipment—and the Chief is portable—fabricated of aircraft aluminum—weighs only 170 lbs. Use it anywhere—IN the shop or ON the job.

With the Chief's patented automatic chuck, you just flip a switch and four jaws front and rear instantly and automatically grip, center, and turn the pipe—another flip and the pipe is released. Quick-opening die heads give the operator accurate control over thread lengths, eliminate back-off. It's the perfect make-up machine —removable carriage and automatic chuck permit fast, economical pre-fabrication.

The Chief is a rugged production machine built and guaranteed by

GAINES-COLLINS
QUIJADA TOOL DIVISION
5474 Alhambra Ave. Los Angeles 32, Calif.
Manufacturers of Automatic Threaders and Cutters for more than a Quarter Century

Write today for new catalog IEN-6

If you write maker identify as IEN - 6454

A.C.M.I. BORESCOPES

for close-up visual inspection of internal surfaces and hidden parts

A.C.M.I. Borescopes are available in 4 angles of vision (as above)—in diameters of .120" to 4.00" —in lengths of 4" to 720". Special models for special problems.

A.C.M.I. Borescopes permit close-up visual examination of interior areas and surfaces not otherwise visible. They save time and money, and prevent costly dismantling. • Each Borescope is a compact, self-illuminated industrial telescope of highest quality, employing a precision optical system, that produces a flat visual field. Lens systems are fully corrected for color, spherical aberrations, and coma, with all lens surfaces coated to increase light transmission.

Write for free informational folder, or tell us your problem.

American Cystoscope Makers, Inc.
1241 LAFAYETTE AVENUE NEW YORK 59, N. Y.

If you write maker identify as IEN - 6455

CUT COST with FLEXAUST*

The high-quality flexible spiral-wire reinforced hose — SIZES 1¼ in. to 36 in. ID

MOVE Air, Dust, Gases, Materials BY Pressure, Suction, Gravity

Check these *Basic Economies:*

- ✓ **INSTALLED IN A HURRY**—Even by unskilled labor. Easy-to-connect accessories. Completely air-tight. No costly layout preliminaries.
- ✓ **STRONG, LONG LASTING** — Bonded, double-ply. Stands up through abrasion, aging, corrosion, moisture, chemicals, unlimited flexing.
- ✓ **MULTI-PURPOSE** — Protects products and health from dust and fumes, improves comfort, makes many jobs simpler, more efficient.
- ✓ **EASY TO MOVE** — Light, fully portable, completely flexible with negligible stress for moving collector heads.

For sizes, coatings, accessories, and flow characteristics . . . write for catalog today.

Your local distributor has Flexaust — as well as the companion ducting, *Portovent.*

THE FLEXAUST COMPANY
Dept. IEN-6, 100 Park Avenue, New York 17, New York
Formerly American Ventilating Hose Co.

FLEXAUST* **PORTOVENT*** **BLOFLEX***
*Trade-marks

If you write maker identify as IEN - 6456

applications unlimited!

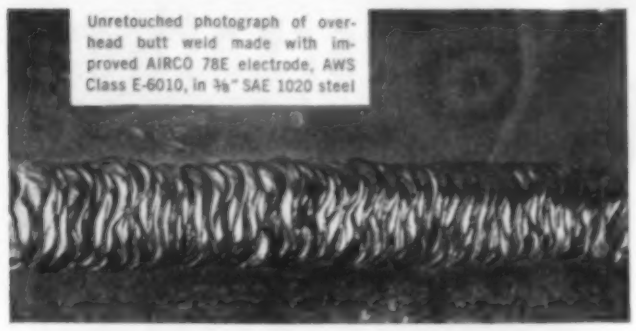
RCA NEW COLOR TELEVISION CAMERA gives Camloc fasteners another chance to prove their versatility

Camloc quarter-turn fasteners belong wherever panels or doors are designed for speedy access. On this intricate color camera, as well as the many other applications where Camloc fasteners are employed, they mean quick engagement, firm grip and quick release.

Write for our illustrated brochure containing descriptive information on the basic Camloc fastener line.

CAMLOC FASTENER CORPORATION
24 Spring Valley Road, Paramus, N. J.
WEST COAST OFFICE: 5410 WILSHIRE BLVD., LOS ANGELES, CAL.

If you write maker identify as IEN - 6457



Unretouched photograph of overhead butt weld made with improved AIRCO 78E electrode, AWS Class E-6010, in ⅜" SAE 1020 steel

Make mild steel welds like this in any position with the

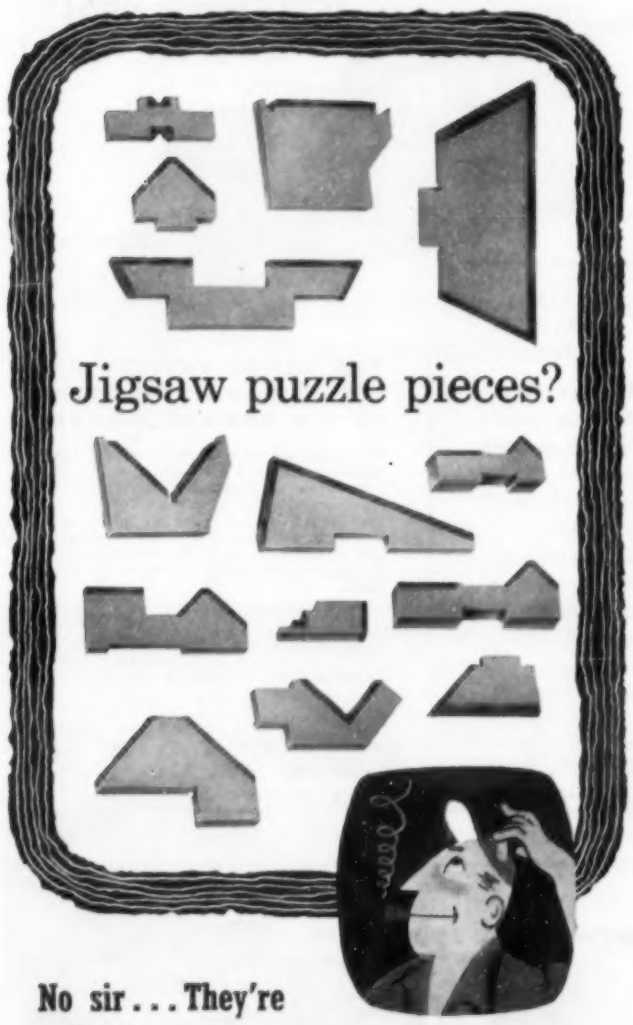
improved AIRCO® 78E

A smooth-looking weld, yes, but appearance is only part of the story with the improved AIRCO 78E electrode for the all-position DC welding of mild steel. The 78E's improved flux coat gives you higher current capacity and faster burn-off rate . . . without "fingernailing" or slag and gas inclusions in the weld metal. Result: in all positions, weld quality is as good as its smooth outward appearance. Write for your copy of "Pocket Guide to Airco Electrodes."

AIR REDUCTION
60 E. 42nd Street
New York 17, N. Y.

Air Reduction Sales Co.
Air Reduction Magnolia Co.
Air Reduction Pacific Co.
Represented internationally by
Airco Company International
Divisions of Air Reduction Co., Inc.

If you write maker identify as IEN - 6458



No sir . . . They're OK hardened bedway cross sections!

Made by The Ohio Knife Co., they show the diversified shapes and sizes supplied. OK's special process of manufacture permits building to your specifications in a wide range of design.

Specially heat-treated tool steel makes OK ways practically wear-proof, helps maintain constant accuracy throughout the life of the machine. This extreme hardness, 65-66 Rockwell "C", is uniform to 3/16-inch depth or more. Long-wearing tool steel is welded to a soft steel backing under 2500 tons pressure. Precision equipment finishes the bedway by grinding to tolerances up to ± .0002 inches.

Manufacturers of . . .
OK WELDED HIGH SPEED SHEAR BLADES • OK SLITTER KNIVES
TUBE CUT-OFFS • OK SOLID STEEL SHEAR BLADES
HARDENED WAYS AND SLIDES • ROTARY SHEARS

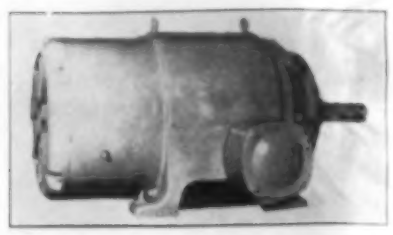
Write today to Dept. J for comprehensive bulletin, or send us your bedway specifications.

THE OHIO KNIFE CO.
CINCINNATI 23, OHIO

If you write maker identify as IEN - 6460

MOTOR . . Totally enclosed and explosion proof designs to 150 hp.

Source: U. S. ELECTRICAL MOTORS INC.
Box 2058, Dept. IEN, Los Angeles 54, Calif.



Technical data on request

New sizes have been added to the company's line of totally enclosed fan cooled and explosion proof motors in Type SD and Type SE so the line now includes a range with ⅛ to 150-hp. ratings. Type SD, totally enclosed fan cooled, is designed for protection against dirt, moisture, oil and chemicals. Type SE is for service where inflammable gases, volatile liquids or combustible dusts may be present. The latter carries Underwriters' Laboratories label for Class I Group D and Class II—Groups F and G.

Windings are asbestos protected to withstand high temperatures. A stator cover plate can be removed for inspection or cleaning. The rotor is made of cast aluminum and is dynamically balanced. Lubri-flush bearings can be re-lubricated without taking them apart. The motor is available alone or in combination with a range of variable speed drives and geared head assemblies manufactured by the company.

If you write maker identify as IEN - 6461

FILTERING . . Dacron woven cloth for service at room temperature

Source: NATIONAL FILTER MEDIA CORP.
1719 Dixwell Ave., Dept. IEN, New Haven 14, Conn.

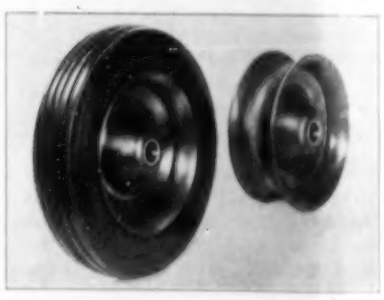
Technical data upon request

The company has added Dacron to its line of filter cloths for application in operations handling alcohols, bleaching agents, ketones, hydrocarbons, dry cleaning solvents, soaps and detergents, weak acids and alkalis, all at about room temperature. The material has good structural strength. It is flex resistant and stands up under severe abrasive conditions. It is resistant to attack by molds, mildew and fungus. It is supplied in pre-shrunk form.

If you write maker identify as IEN - 6462

WHEEL . . Molded plastic, designed for a semi-pneumatic tire

Source: NORTHWEST PLASTICS INC.
65 Plato Ave., Dept. IEN, St. Paul 1, Minn.



Pleasing appearance

New wheel is molded in one piece to include a plain hub or one with a bronze bearing. Bore is ½ inch. Bore length is 1¾ or 1½ inches. The wheel is designed for use on low speed equipment. It takes a 6 by 1.50 tire and is available in eleven standard colors.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6463

THIS MACHINE TOOL CONTROL TRANSFORMER

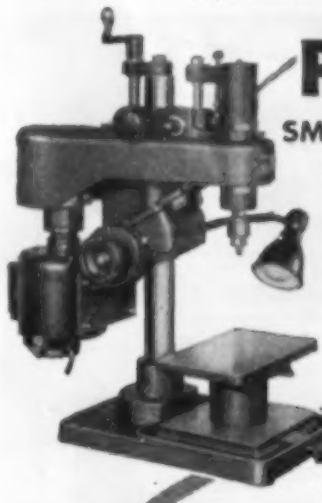
IS ENGINEERED TO PROVIDE THE REGULATION YOU NEED

This New Series Acme Electric Machine Tool Control Transformer more adequately withstands the low power factor and current surges when solenoids, contactors and switches of machine tool controls go into action. Sturdily constructed to provide adequate capacity for momentary overloads. Compare regulation curves. Write for Bulletin CT 194.

ACME ELECTRIC CORPORATION
MAIN PLANT: 266 WATER STREET • CUBA, N. Y.
West Coast Engineering Laboratories:
1375 W. Jefferson Blvd., Los Angeles, Cal.
In Canada: Acme Electric Corp. Ltd. • 50 North Line Rd. • Toronto, Ont.

Acme ACME Electric TRANSFORMERS

If you write maker identify as IEN - 6464



5413

PRECISION SMALL HOLE DRILLING

Should always be done on the

HAMILTON VARIMATIC®

STURDY
BENCH TYPE
VARIABLE SPEED
SUPER SENSITIVE
PRECISE

For complete information write for our FREE Bulletin No. 5413. Address
The Hamilton Tool Company,
905 Hanover Street, Hamilton, Ohio.

IT'S A *Hamilton Tool*
USE IT WITH CONFIDENCE

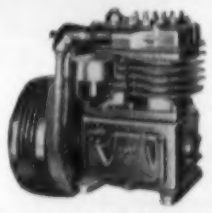
If you write maker identify as IEN - 6465

GET MORE PRODUCTION PER MAN HOUR

with the Help of Dependable Efficient

Curtis

Air Compressors

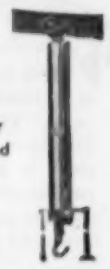


Available up to 320 cu. ft. Can be supplied base mounted up to 50 H.P. or tank mounted up to 15 H.P. Timken bearing equipped . . . precision built.

Air Cylinders and Hoists

To lift, lower, push, or pull

Pendant air hoist is ideal for lifting or lowering—Bracketed Air cylinder can be mounted in any position for lifting, lowering, pushing or pulling.

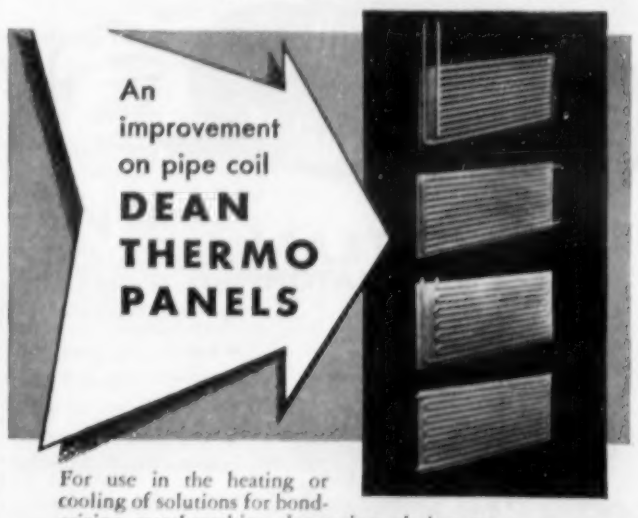


For more information write to:

CURTIS PNEUMATIC MACHINERY DIVISION of Curtis Mfg. Co.
1941 Kienlen Avenue • St. Louis 20, Missouri
764

100 Years of Successful Manufacturing Experience

If you write maker identify as IEN - 6466



An improvement on pipe coil
DEAN THERMO PANELS

For use in the heating or cooling of solutions for bonderizing, metal washing, degreasing, plating, etc. Low in first cost . . . light weight . . . space-saving . . . do away with expensive pipe coiling . . . provide efficient heat transfer.

Available in special shapes such as "U"s, "L"s, and cylinders . . . and in a wide range of materials, including iron, stainless steel, Monel and other special alloys.

Send for FREE bulletin giving facts and prices. **Dept. IEN6**

Manufacturers Representatives Wanted.
Write for details. Choice territories now open.

THERMO-PANEL DIVISION
DEAN PRODUCTS, INC. • 616 Franklin Ave., Brooklyn 38, N. Y.
STerling 9-5400

If you write maker identify as IEN - 6467

NEW PRESS BRAKE

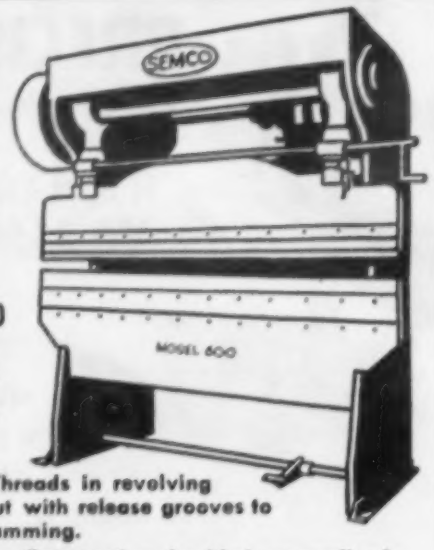
IN TWO SIZES
6 FT. and 8 FT.

•

LOW PRICED

•

BIG PRESS FEATURES



- **Buttress Threads in revolving bronze nut with release grooves to prevent jamming.**
- **One Piece Construction (welded, normalized, machined in one piece).**
- **Ball and Roller Bearings throughout.**
- **Fine adjustment.**

Made by the makers of famous SEMCO "34 YEAR" BRAKE DIES.

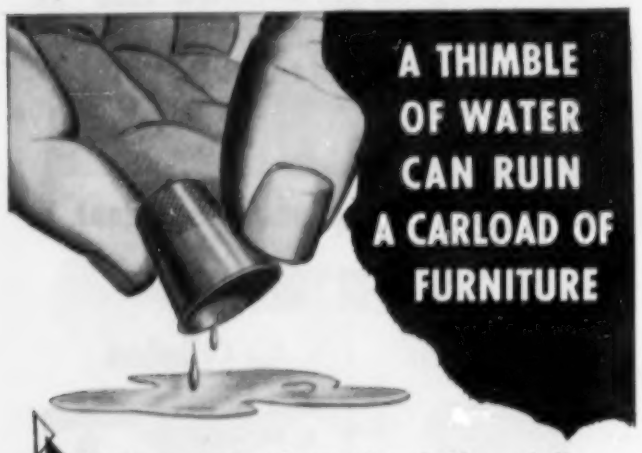
Write for NEW color folder and prices of PRESS BRAKES and 26 standard BRAKE DIE designs. Send die specifications for estimate.

SEMCO

SERVICE MACHINE CO., INC.

200 MILLER STREET • ELIZABETH 4, N. J.

If you write maker identify as IEN - 6468



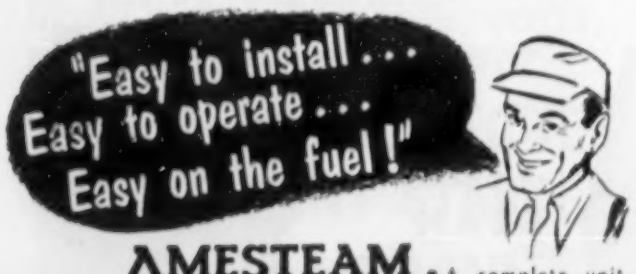
Just let a droplet of water form inside an air line at a paint spray booth and the result is always the same. The product must be expensively refinished. Droplets of water are undesirable everywhere in air lines at paint spray booths, air tools . . . in fact, all pneumatic equipment. Hi-eF purifiers not only remove all dirt and water but are absolutely maintenance free, no messy filters to change...no moving parts to replace.

FREE Bulletin 501 shows how to save money on air lines with Hi-eF Purifiers. Write The V. D. Anderson Company, 1966 West 96th Street, Cleveland 2, Ohio.

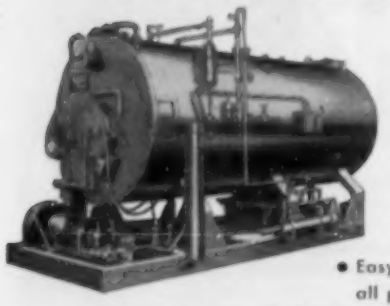
Hi-eF PURIFIERS

KEEP DIRT AND MOISTURE OUT OF AIR LINES

If you write maker identify as IEN - 6469



AMESTEAM GENERATOR



- A complete unit, piped and wired, ready for service connections.
- Needs no special foundation or expensive stack.
- Fully automatic . . . attention-free.
- 80% efficiency means real fuel savings.
- Easy to clean and service . . . all parts accessible.

20 SIZES — 10 to 600 h.p. —
15 to 200# OIL OR GAS

FREE BULLETIN!
WRITE FOR YOUR COPY

Complete engineering facts on the exact AMESTEAM GENERATOR to do your job and save you money. Write today!

AMES IRON WORKS

BOX E-64, OSWEGO, N. Y.

If you write maker identify as IEN - 6470

TESTING . . Environment chamber to 200 deg. F., 95 per cent humidity

Source: HUDSON BAY DIVISION
646 W. Washington Blvd., Dept. IEN, Chicago 6, Ill.

Bulletin 109-101

Weather-Lab is a new environment chamber available in 20 and 30 cu. ft. test chamber sizes to simulate atmospheric conditions between 35 and 200 deg. F. and from 20 to 95 per cent humidity. It can be employed to test products for conformance to "above-freezing" specifications JAN and MIL. It is suited to study the effects of climate on animal and vegetable life, mold and fungus growth.

The basic assembly is equipped with an exterior mounted control panel on which adjustable wet and dry bulb thermostats are assembled with switches and pilot lights that control and indicate the operation of various elements in the test equipment. A cam operated program control can be specified.

The front is fitted with two hinged doors. Cooling, heating, humidifying, dehumidifying and air moving equipment are located within an enclosed portion of the test space. The hermetically sealed refrigeration condensing unit is assembled in a machine compartment in the base. Interior and exterior are stainless steel. Insulation is glass wool.

If you write maker identify as IEN - 6471

ELEVATOR . . Portable stand for construction and maintenance work

Source: UNITED STEEL AND WIRE CO.
Dept. IEN, Battle Creek, Mich.

Rolls to the job

The work platform on this new Model-D4 portable elevator is adjustable between 3 and 7 ft. above the floor by operating a hand pump mounted on the platform. A railing surrounds the platform to enclose a 3 by 6½-ft. deck with load capacity to 500 pounds. The deck is surfaced with non-skid mesh. The railing measures 42 in. in height.

The platform is supported on a caster equipped base, measuring 53 by 96 inches. Step type ladders with safety non-skid mesh provide access from the floor. The casters are 8-in. plate type swivel units with Timken bearing axle and swivel. The assembly includes a four-position swivel lock and two brakes.

If you write maker identify as IEN - 6472

Spirit level is assembled in a 5-in. length of hexagon aluminum tube and the tube is equipped with a pocket clip. It provides you with a handy little tool to square up appliances, furniture, machines. It lists at about $1 and is made by Stanley Tools, 480 Myrtle St., Dept. IEN, New Britain, Conn. Designation is Pocket Level 188.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6473

A PAID NEWS ADVERTISEMENT BY IRVINGTON VARNISH & INSULATION CO.

VACUUM-PRESSURE APPLICATION GIVES BETTER VARNISH PENETRATION

Better penetration of electrical windings by insulating varnishes may be obtained by the vacuum - and - pressure method than by simple dipping procedures. Internal curing varnishes of the type manufactured by Irvington are particularly adaptable to this impregnating procedure.

Recommendations on degree of vacuum, amount of pressure, times and temperatures are available on specific insulating requirements from the **Sales Manager, Varnish Department, Irvington Varnish & Insulator Company, 31 Argyle Terrace, Irvington, New Jersey.**

If you write maker identify as IEN - 6474

versatile - from Jack Hammer to Paint Spray

Quaker

VERSATILE HOSE

Here's a hose that can handle just about any heavy duty job you can mention. Its combination of exceptional light weight and high flexibility makes it ideal for air, gas, oil, water, paint . . . even mild acid solutions. Specially treated high tensile fibres give extra strength. Non-porous, oil and abrasion resistant for long wear. Economical, too . . . reduces stocks, storage space, remnant ends because Versatile alone will replace several old-style specialized hoses. For service and savings, use Versatile hose . . . another Quaker quality product for better production.

Write for free folder and name of nearest distributor.

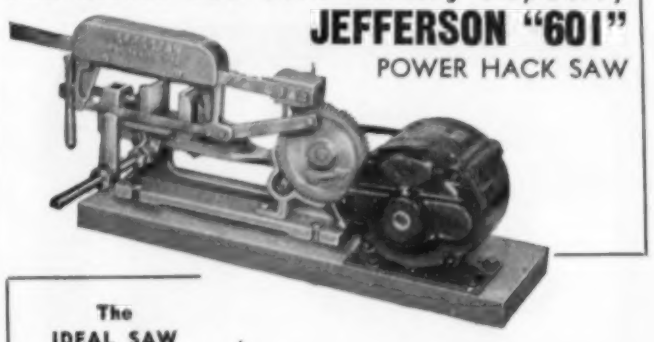
QUAKER RUBBER CORPORATION
DIVISION OF H. K. PORTER COMPANY, INC.
OF PITTSBURGH
PHILADELPHIA 24, PA. • BRANCHES IN PRINCIPAL CITIES

If you write maker identify as IEN - 6475

The Little Saw with the Big Capacity

JEFFERSON "601"

POWER HACK SAW



The IDEAL SAW for:

Machine Shops
Welding Shops
Implement Shops
Garages
Hobby Shops
Blacksmiths
Service Stations
Plumbers
Electricians
Farmers
Steamfitters
Maintenance Men

THE LARGE VARIETY OF USES PUTS THIS HANDY SAW IN BIG DEMAND GROUP

This little saw does a truly big job with precision accuracy and dependability. It cuts all metals including steel, brass and aluminum. It will handle up to 3½" x 3½" stock — square, round or pipe. Standard equipment includes a swivel vise which mitres up to 45°, and a sturdy gauge bar for uniform length of cut stock.

. . . and, IT SELLS FOR ONLY **$71.50** including motor, F.O.B. Eau Claire, Wisconsin.

Write today and let us send you complete information and details.

Sales Service Machine Tool Co. SSMT

PRESS RITE PRESSES • SHAPE RITE SHAPERS • KELLER POWER HACK SAWS

2365 UNIVERSITY AVENUE • ST. PAUL W4, MINNESOTA

If you write maker identify as IEN - 6476

ANYWAY YOU LOOK AT IT . .

FORT WORTH Hi-Cap *High-Speed* **Elevator Buckets**

GIVE

GREATER CAPACITY LONGER LIFE

Made of HEAVY GAUGE STEEL—

All Welded No Rivets

FORT WORTH

HI-CAP buckets are designed for high-speed elevators, although they may be used for replacements in old elevators where increased capacity is required. They are suitable for use in either chain or belt elevators and will discharge properly at high or medium belt speeds. They may be spaced on very close centers, or continuous.

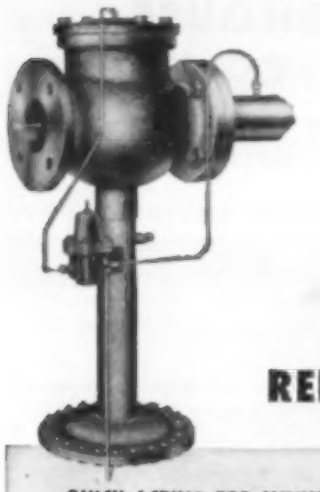
WRITE FOR CATALOG SECTION 416

FORT WORTH STEEL & MACHINERY CO.

DEPT. 26 3600 McCART, FORT WORTH, TEXAS

FORT WORTH WAREHOUSES: • CHICAGO • ATLANTA • ST. LOUIS • JERSEY CITY • KANSAS CITY • LOS ANGELES • SAN FRANCISCO • MEMPHIS • HOUSTON

If you write maker identify as IEN - 6477



for more accurate pressure control the NEW Klipfel PILOT-OPERATED

REDUCING VALVE

No. 933

QUICK ACTING FOR MINIMUM PRESSURE VARIATION

When you need "on-the-button" steam pressure reduction, specify the new Klipfel Pilot-Operated Reducing Valve. Although extremely sensitive, its simple operation insures trouble-free service. Downstream pressure is sensed by the diaphragm of the pilot valve. The pilot valve uses upstream pressure to open the main valve if downstream pressure is too low; if too high, pressure is bled off to partially close main valve. The next time you order a reducing valve, get the new standard for accurate control and low cost operation . . . Klipfel No. 933 Reducing Valve. Detailed literature on request.

Klipfel VALVES, INC.
1072 LINCOLN AVENUE
HAMILTON, OHIO

If you write maker identify as IEN - 6478

HOUDAILLE automatic conveyors

the LOW COST answer to your loose materials handling problems

automatic continuous

Collects, Transports and Discharges Solid or Fibrous Materials—Powders, Chips, Dust, Scale, etc.—Wet or Dry!

Tubular or open flights carry any materials which settle to bottom of tanks . . . continuous or intermittent operation.

System eliminates costly manual handling methods, speeds up production, pays for itself in maintenance savings alone.

Readily adaptable to almost any space or traverse requirement . . . standard pipe sizes —3", 4", 6", 8".

Houdaille Conveying Systems "individually engineered" by Honan-Crane to solve your particular conveying problem.

Houdaille Conveyor System removes chips from broaching machines in large aircraft plant. Operating automatically and continuously, each conveyor services a single machine. Chains and flights travel nine feet below floor level, use minimum floor space.

Write for 30-page catalog giving full details and case histories of Houdaille Conveyors.

HONAN-CRANE CORPORATION
802 Wabash Ave., Lebanon, Indiana
a subsidiary of
HOUDAILLE-HERSHEY CORP.

WORLD'S LEADING OIL FILTER MANUFACTURER

If you write maker identify as IEN - 6480

PACKAGING . . Platform scale and electronic control fill by weight

Source: NATIONAL STORE SPECIALTY CO.
Dept. IEN, Bareville, Pa.

Available to order

Illustrated is new assembly of one of the company's weighing scales with an over-and-under dial and with an electronic control to close a solenoid valve in the filling line from a liquid supply source. The equipment is positioned beneath the delivery from the valve and the control is connected to it. An empty container is placed on the scale platform after the scale has been set for tare equal to the weight of the container plus the liquid.

Movement of the scale pointer over its dial, as filling proceeds, moves a metallic vane between high frequency coils located at a desired point on the scale. When the vane stands between the coils, the circuit impedance is changed to cause control relays to open or close. This action actuates the solenoid valve to cut off further delivery.

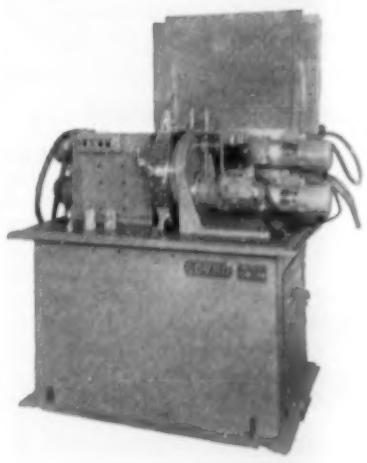
The company is prepared to supply the equipment to a maximum capacity of 50 lb. with sensitivity to 0.001 ounce. Within this range, the scale size varies from 11 by 24 in. to 12 by 34 in. in base dimensions.

The line also includes models that operate from one or two control points that are movable on the graduated scale chart so initial fast delivery can be slowed down prior to cut off. The equipment also is available with a vibratory feeder in the place of the solenoid valve to handle dry materials. In this case, the electronic control first slows down and then stops the feed action.

If you write maker identify as IEN - 6481

DRILLING . . Multi-spindle machine drills and reams opposed holes in line

Source: GOVRO-NELSON COMPANY
1933 Antoinette, Dept. IEN, Detroit 8, Mich.



Built to order

The operator of this new machine loads and clamps a work piece and starts the machine's automatic cycle. The work is drilled, reamed, released and ejected. The assembly includes a 6-station geneva index dial, electrically interlocked with four of the company's Govro-Nelson Type-KH drilling heads. Production rate is 900 pieces per hour. The work involves drilling and reaming two opposed holes.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6482

TRY THIS 5-Second TEST...

. . . You'll Visualize 100 Different Uses For VISE-GRIP In Your Various Plant Operations!

Simply pick up a Vise-Grip, and with a squeeze of your hand lock jaws onto the head of a bolt or any small, hard-to-grasp object. Terrific Ton-Grip HOLDS. Won't slip. Bends, turns, twists, pulls, cuts, ratchets. You'll say "the most versatile tool I've seen!"

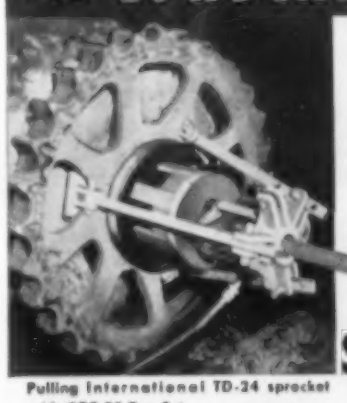
MANUFACTURED ONLY BY

PETERSEN MFG. CO.

DEPT. IEN-6, DEWITT, NEBR.

If you write maker identify as IEN - 6483

PULL SPROCKETS IN MINUTES WITH THE NEW OTC SPROCKET PULLER



Pulling International TD-24 sprocket with OTC 50 Ton Set.

OTC 50 TON Hydraulic Ram with Adaptors pulls or installs on the job or in the shop.

SAVE TIME, LABOR . . . REDUCE "DOWN-TIME"

OTC 50 Ton POWER-TWIN Hydraulic Ram . . . used for hundreds of tough jobs including the above.

Now the costly job of pulling Crawler-Tractor sprockets can be done in minutes by one man. Manufacturers approved sets are available for, Caterpillar, Allis-Chalmers and International Harvester . . . or a Universal Set to fit all three. If you have a 50 Ton OTC Ram, you need only the adaptors . . . three types of pumps available.

SEND FOR FREE FOLDER

OWATONNA TOOL COMPANY
371 Cedar Street • Owatonna, Minnesota

If you write maker identify as IEN - 6484

General Plate TRUFLEX®

THERMOSTAT METALS

Fit Into Your Product Picture

for Temperature Reaction, Accurate Performance and Economy!

General Plate *Truflex* Thermostat Metals and Fabricated Assemblies can cut your costs and give you reliable performance in your products requiring temperature control, indication or compensation.

Advanced General Plate production methods coupled with the best equipment available insure positive consistency in thermal and mechanical performance, and in maintaining close dimensional tolerances, hardness, etc. Every lot, whether it is 10 or 10,000, is a duplicate of the original, thus eliminating rejects and costly adjustments in assembly.

General Plate *Truflex* fabricated assemblies are engineered and manufactured to your specifications, ready for installation into your products. They eliminate costly fabrication problems . . . needless special equipment costs . . . experimental and assembly adjustments.

For you who desire to manufacture your own parts, *Truflex* Thermostat Metals are available as strip in coils or flat cut lengths.

It will pay you to investigate General Plate Truflex Thermostat Metals for your requirements. Write for engineering assistance and catalog.

METALS & CONTROLS CORPORATION
GENERAL PLATE DIVISION
76 FOREST ST., ATTLEBORO, MASS.

If you write maker identify as IEN - 6485

For low price per pound of lifting capacity, look into this Koehring 205 Crane. On crawlers, it lifts 10 tons; has 30 to 50-foot boom. As a rubber-tired truck crane it gives you 15 tons of lift capacity . . . boom lengths from 25 to 55 feet, plus 30-foot max. jib. Also handles ½ to ¾-yd. clamshell buckets on a wide work range . . . converts to ½-yd. shovel or hoe. See Koehring distributor for complete details . . . or write for bulletin on this new 205.

(Larger cranes up to 79½ tons)

KOEHRING CO., Milwaukee 16, Wisconsin

K443

If you write maker identify as IEN - 6486

Equip your valves for
AUTOMATIC PROCESSING
REMOTE CONTROL
POWER OPERATION

(Left) Ledeen Tandem Type Valve Actuator on Standard Plug Valve.

(Above) High Pressure Gate Valve with Ledeen Valve Actuator.

with
Ledeen VALVE ACTUATORS

These actuators are for the automatic operation of gate, diaphragm, plug and other line valves, and are pneumatically or hydraulically operated for direct or remote control. Designed as package units, they are mounted directly on the valves without need of special manifolds or outside supports. They are easily, quickly and rigidly installed on new valves or on valves in service.

Ledeen Valve Actuators provide positive operation, permit automatic processing, safety installations, multiple central control ,and require a minimum of maintenance. WRITE FOR BULLETIN 3000.

- Simple, Rugged Construction.
- Few Moving Parts.
- Easily Installed.
- Prompt Delivery.

AIR HYDRAULIC PUMPS & BOOSTERS
VALVES-CYLINDERS-VALVE ACTUATORS

Ledeen Mfg. Co.
1602 San Pedro St.
Los Angeles 15, Cal.

If you write maker identify as IEN - 6487

ARE YOUR PLANT AND FACILITIES BURIED?

Model 218

Plants and machinery buried in dirt and debris won't meet our country's increasing production demands. Keep your plant clean at all times.
Doyle Vac-Its are vital to your defense programs. Write Doyle today. No obligation.

Doyle VACUUM CLEANER CO.
2235 Stevens St., S. W. Grand Rapids 7, Michigan

If you write maker identify as IEN - 6488

Write for Bulletin No. 100

New! **Atkomatic**
SOLENOID
Stainless Steel
Direct Lift Valve
to 5000 P.S.I.

Rugged, simple, compact, heavy-duty, two way valve for broad industrial applications. Assures continuous service, nothing to wear out, has only two moving parts. Instantaneous action.

Features higher pressures, greater corrosion resistance. ⅛ and ¼ inch pipe sizes, orifices 1/16 to 3/16 inch diameter. Bodies are 303 Stainless, Solenoid armature is 416 Stainless.

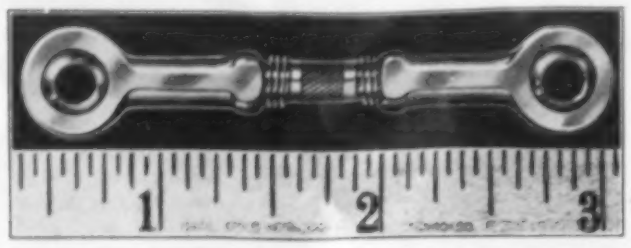
Pressures: 5000 P.S.I. to 150° F. maximum, 2500 P.S.I. to 475° F. maximum. Paper insulated coils up to 180° F., glass insulated, silicone impregnated up to 475° F.

ATKOMATIC VALVE COMPANY
545-A ABBOTT STREET • INDIANAPOLIS 25, INDIANA

If you write maker identify as IEN - 6489

CONTROL . . Ball end connector has a turn buckle length adjustment

Source: AVALON MACHINE PRODUCTS INC.
2535 E. Imperial, Dept. IEN, Los Angeles 59, Calif.



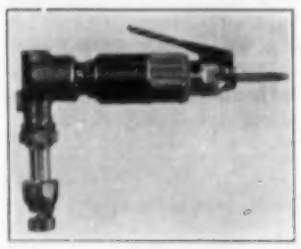
For use on a machine

The "eye" at each end of this new connector is a ball and socket assembly for self-aligning action when the connector is employed to link two machine parts. The assembly includes spring lock adjustments, or locknuts, and a centrally located turnbuckle with right and left hand threads for length adjustment. The end bore ranges from $\frac{3}{16}$ to $\frac{5}{16}$ inch. Length starts at 2⅞ in. between centers with list price starting at $1.50.

If you write maker identify as IEN - 6490

NIBBLING . . Portable pneumatic tool has capacity to cut 18 gage mild steel

Source: BUCKEYE TOOLS CORP.
Box 966, Dept. IEN, Dayton 1, Ohio



Note extended head

New design of the company's air operated portable nibbler, previously described IEN-9092-48, is shown in the illustration. The former tool was rated to 20 gage in mild steel. The new unit will handle 18 gage. Cutting action is sharp and clean without distorting the exposed edges of the metal. Cutting radius is minimum at 1 inch. Any contour can be followed by the new tool.

The tool is available with a lever or a lock button throttle and is equipped with hardened and ground anvil and punch, both accessible for regrinding or replacement. Cutting can start at any point where an access hole can be provided.

If you write maker identify as IEN - 6491

Gas masks in their carrying cases, a fire axe, crow bars, floodlights, portable hand searchlights, a portable lighting generator, electric microphone with its power unit, and a floodlight are carried by this new special design of trailer. It was developed to order by Preakness, Inc., 1060 Broad St., Dept. IEN, Newark 2, N. J. for a New Jersey manufacturer. It operates as an emergency unit in addition to the manufacturer's regular fire fighting equipment.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6492

measure the TEL in Gasoline
Accurately-Easily
with FISHER
TEL-METER

Tetraethyllead in gasoline is measured by polarographic means in this unusual instrument and the amount in milliliters per gallon is read directly on an illuminated scale.

Fifty milliliters of sample are required for one determination and the working range of the TEL-Meter is 0 to 5 ml of TEL per gallon. It is based on the polarographic method tentatively adopted by ASTM to supplement their method D 526. The TEL-Meter is easy to operate and no special technique is required.

The instruction manual supplied with the TEL-Meter contains complete directions for preparing the standard cadmium solution and a standard lead solution. It is immediately available from stock.

Write for Booklet FS-235-Q for complete information and description of Fisher TEL-METER.

FISHER SCIENTIFIC
717 FORBES ST. PITTSBURGH 19, PA.

If you write maker identify as IEN - 6493

WESTINGHOUSE PNEUMATIC CONTROL
reduces wear and tear on paper machine

• Thilmany Pulp and Paper Company, Kaukauna, Wisconsin, selected Westinghouse Air Brake Co. Pneumatic Control to assure smooth, shock-free operation of a new paper machine. Westinghouse Valves are used to precisely adjust pneumatic clutches and brakes on the dryer rolls, couch, presses, calendar, and reel.

Wherever you need precise control of linear motion—on brakes, clutches, small presses, positioning devices, sequencing mechanisms, and the like—investigate the possibilities of Westinghouse Pneumatic Control. Our engineers will be glad to help you. Just write, explaining your problem.

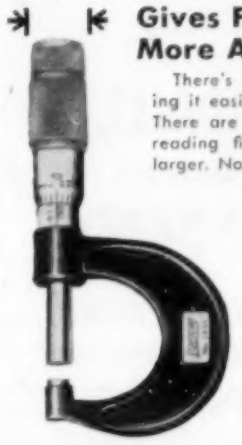
Westinghouse Air Brake COMPANY
INDUSTRIAL PRODUCTS DIVISION WILMERDING, PENNA.

Manufacturers of air compressors, pneumatic cylinders, actuators, air control devices of all kinds, engineered pneumatic control systems and front end loaders.

FACTORY BRANCH: Emeryville, Calif.
Distributors throughout the United States . . . See your classified directory.
Distributed in Canada by: Canadian Westinghouse Co., Ltd., Hamilton, Ontario.

If you write maker identify as IEN - 6494

18% BIGGER BARREL



Gives Faster, Easier, More Accurate Measurements

There's more space between graduations making it easier to estimate fractions of thousandths. There are longer graduation lines and the rapid reading figures marking each thousandth are larger. Non-glare Chrome-Clad satin finish on the barrel gives you easy reading even in poor light. Lufkin micrometers are easiest to adjust, too — the reading line keeps its original position directly in line of vision and the thimble doesn't cover measurements on the hub.

New LUFKIN Big Barrel Micrometers

A Complete New Line To Exactly Fit Your Needs

In the new Lufkin Big Barrel Micrometers you have a choice of Friction Thimble, Ratchet Cap or Direct Feel only. You can have the exclusive new Lufkin Slip-Proof black crackle finish on the frame or Chrome-Clad satin finish. You can have any style with or without lock-nut. You can have carbide tipped anvil and spindle. The new Lufkin shorter design gives you better balance and the extended anvil and tapered frame permit you to take measurements in places inaccessible to other micrometers. You'll like the new Lufkin Big Barrel Micrometers — try the one of your choice today.

BUY LUFKIN TAPES • RULES • PRECISION TOOLS FROM YOUR DISTRIBUTOR
313
THE LUFKIN RULE CO., • SAGINAW, MICHIGAN
132-138 Lafayette St., New York City • Barrie Ont.

If you write maker identify as IEN - 6495

MAN SAVER

Sweeps up to 400% faster than costly pushbroom cleaning . . . saves money . . . saves manpower

A Parker Floor Sweeper saved $2100 a year for a food manufacturer — $520 a year for a lumber yard—75% of all sweeping costs for a building material manufacturer. *You, too, can save.*

Sweeps all type floors. Collects and sweeps in one operation. Easy to empty. A money-saver for any plant from small garage to large factory or warehouse.

Now available — information file containing time studies, case histories, and full details. *Write, wire, or telephone today.*

FACT FILE AVAILABLE
PARKER INDUSTRIAL FLOOR SWEEPER
PARKER SWEEPER CO. • 56 Bechtle Avenue, Springfield, Ohio

If you write maker identify as IEN - 6496

On any steel blackening problem

DEPEND on DU-LITE for a Superior Finish

Courtesy The Poly Choke Co.

Here's an example . . .

Du-Lite gave this part with its complicated knurls, slots, threads, etc. a fine rust-resistant durable black finish. It is typical of many other parts, small and large, which have been black oxidized by Du-Lite for many years. Moreover, Du-Lite meets most individual and government specifications including 57-0-2C for Type III Black Oxide finish.

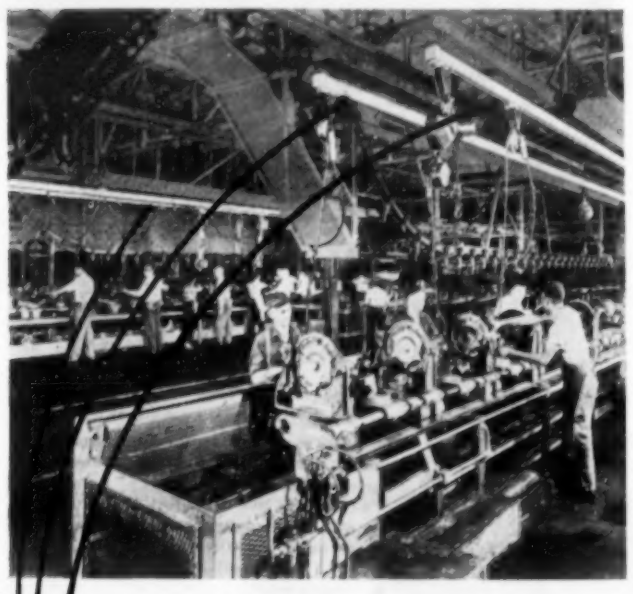
What's YOUR problem?

Du-Lite installations are simple, compact, easy to operate. Du-Lite equipment can be tailored to fit production requirements on all types of jobs with a maximum of speed and economy. Du-Lite also makes a complete line of cleaners, strippers, wetting agents, passivating agents, rust preventatives, burnishing compounds, etc. for any metal finishing application.

See your nearest Du-Lite Field Engineer or write for more information.

Du-Lite DU-LITE CHEMICAL CORP. MIDDLETOWN • CONN.
METAL FINISHING SPECIALISTS

If you write maker identify as IEN - 6497



ELECTRIC POWER where you want it! when you need it!

FEEDRAIL® Trolley Busways

● Get acquainted with industry's most modern, most flexible, most convenient system of electrical distribution — FEEDRAIL Trolley Busways. Here's the electrification system that's made to order for fast, low-cost assembly and production.

Installed over work areas, FEEDRAIL provides a continuous, uninterrupted source of electric power. Through its easy rolling trolley outlets, the power can be brought to the work — or move right along with it. Any tool or machine used on an assembly line can be powered by FEEDRAIL. If new tools are put into service, additional trolley outlets can be quickly and easily inserted in the track without shutting down power — and without interrupting work in process.

And, should future plans require extensive changes in your production set-up, FEEDRAIL can be quickly dismantled and reinstalled in another area to serve an entirely different operation.

GET THE FULL CONVINCING DETAILS . . .
Descriptive literature showing how FEEDRAIL can be applied to your own requirements is yours for the asking. Write Dept. N-6.

SOLD BY MORE THAN 1,000 ELECTRICAL DISTRIBUTORS COAST TO COAST

P4-1A

Never Becomes Obsolete
ELECTRIC FEEDRAIL®
FEEDRAIL CORPORATION
Subsidiary of Russell & Stoll Company, Inc.
125 BARCLAY STREET • NEW YORK 7, N. Y.
SPECIALLY QUALIFIED REPRESENTATIVES IN PRINCIPAL CITIES

If you write maker identify as IEN - 6499

DRILLING . . Upright machine, single spindle and gang assemblies

Source: EDLUND MACHINERY CO.
37 Huntington St., Dept. IEN, Cortland 44, N. Y.

Bulletin 150

Model 2MS, with 12 and 15-in. overhang and 1 to 8 spindles, and Model 4MS with 12 or 16-in. overhang and 1 to 4 spindles, are new machines in which the motor is vertically mounted in line with the spindle. Both models are available with the company's semi-automatic power feed, reversing motor tapper, or lead screw tapper.

The smaller of the two models is designed for general production and tool room use. It employs a 2-hp. motor for a drilling capacity to 1 in. with added capacity to 1¼ in. employing back gears. Direct drive spindle speed ranges from 600 to 3,600 rpm. When the back gears are in position, the range is 115 to 900 rpm.

Model 4MS rates direct to 1½ in. in drilling capacity. Its direct spindle speeds are 450 to 1,200 rpm. They are 112 to 300 rpm. with the back gears engaged.

If you write maker identify as IEN - 6500

WELDING . . Arc electrode for manganese steel, work hardens

Source: ALLOY RODS COMPANY
5141 Lincoln Highway W., Dept. IEN, York, Pa.

Technical data in Bulletin AR-5

Wear-Arc Super WH is a new flux coated alloy steel electrode to produce high strength ductile welds on austenitic manganese steel. At the same time, it work hardens in service to present a strong shockproof wear resistant surface. The electrode applies with ac. welding equipment or with reverse polarity dc. in all positions. It is available in ⅛ to ¼-in. sizes. The electrode will cover about 22 sq. in. to ⅛ in. depth per pound. Packaging is in 14-in. lengths in hermetically sealed metal containers.

If you write maker identify as IEN - 6501

DRAFTING . . Plastic board designed to hold 8½ by 11 in. sheet

Source: GRAPHOSTAT COMPANY
110 Eaton Place, Dept. IEN, East Orange, N. J.

No thumb tacks

New board, measuring 9¾ by 12¼ in., is made of translucent plastic and is equipped with vertical and horizontal retractable straight edges, as well as four recessed clamps, to hold an 8½ by 11-in. sheet of paper. Two plastic triangles are held in clips on the back of the board. List price complete is about $5.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6502

Protects AIR TOOLS AND EQUIPMENT

against rust, scale and condensation in the air line . . . provides constant lubrication

The Keller Lubricator-Filter operates automatically when air tools or equipment are in operation. Filter removes moisture as well as solids—easily cleaned by opening drain cock at bottom. Oil feeds from the lubricator through an upright wick—no flooding or waste when tools are not in use.

Transparent bowls show when filter needs draining, or when light spindle oil should be added to lubricator. Write for descriptive Bulletin #65-5.

Send for illustrated descriptive bulletin and detailed information

Keller Tool Company
1329 Fulton St.
GRAND HAVEN, MICHIGAN

If you write maker identify as IEN - 6503

PITTSBURGH GAS FIRED UNITS

obtain Accurate, Dependable Temperature Control
WITH

Pittsburgh Gas Fired Unit Heaters, manufactured by the Automatic Gas Equipment Company, Pittsburgh, Pa., are quality heaters designed to give maximum BTU value plus exceptionally long life.

To insure accurate temperature control, Automatic Gas Equipment Company uses Klixon Thermo-Snap Controls in their units.

Here's what Mr. N. L. Blackmore, Sales Manager, has to say about Klixon Thermo-Snap Controls:

"The small limit control, your C-4370, which we use is compact and takes up little space and does a very good job.

We have been using Klixon Controls for over fifteen years and have found them to be very durable and dependable."

What's your temperature problem . . . low and high limit controls, fuel delay switches, tube and rectifier cooling, fan switches, temperature control . . . Klixon Thermo-Snap Controls are meeting the requirements for these and other applications in military and civilian products, daily.

Klixon Thermo-Snap Controls are available in many hermetically sealed and open types in a wide variety of operating temperature ranges.

Klixon Engineers, specialists in temperature control applications, can help you solve your specific problems. Write for their help or further information.

METALS & CONTROLS CORPORATION
SPENCER THERMOSTAT DIVISION
206 FOREST ST., ATTLEBORO, MASS.
KLIXON

If you write maker identify as IEN - 6504

Signode Strapping Tools and Equipment for heavy freight securement. This set is used for expertly bracing open as well as closed cars of heavy industrial freight including stop-in-transit cars. They are well suited for truck freight securement, keeping loads from shifting on flat beds or within truck trailers.

Simple in design, they give continuous trouble-free long-lived service. Shown here are the stretcher, sealer, strapping, seals and mobile strap dispenser you need for applying 1¼" x .035 heavy-duty strapping—the size generally specified for heavy freight bracing. Excellent for freight docks.

Let a Signode fieldman show your workman how to use these time and money-saving tools. Write SIGNODE STEEL STRAPPING COMPANY, 2611 North Western Avenue, Chicago 47, Illinois

THIS SEAL MEANS SIGNODE SECURITY IN SHIPPING

If you write maker identify as IEN - 6505

Bond Universal Lift Jack and Platform

Bond Self Load-Unload Drum Truck

Best for Materials Handling
Bond
PRODUCTION BUILDERS

Speed your materials handling with Bond equipment. Bond casters, lift jacks and hand trucks build more efficient production . . . make it faster, easier, more profitable. And all Bond equipment is rugged, dependable . . . built for years of trouble-free service.

36-A Series—Double Ball Race Swivel Caster

1-A Series—Stationary Caster

See your industrial distributor . . . use his qualified services in selecting, and maintaining the *right* Bond equipment for your jobs. Write for your copy of Bond Catalog K-38.

BOND FOUNDRY & MACHINE CO.
Manheim, Pa.

If you write maker identify as IEN - 6506

Get the most "coverage" for your money

GOLD SEAL PLASTIC Electrical Tape

Now . . . Gold Seal time-proved quality in *Plastic* Tape. Neat, thin wrapping gives all needed insulation on most jobs. Sticks fast — gives lasting protection — resists sunlight, water, oil solvents. Try it. Free sample on request. Jenkins Bros., Rubber Div., 100 Park Ave., New York 17.

JENKINS

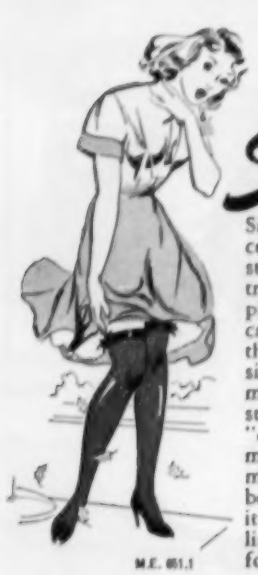
Gold Seal Tape

FRICTION • RUBBER • PLASTIC

Single rolls, cellophane protected, and 10-roll Handy Pack cartons. Also Diamond Seal Friction and Rubber Tapes made to ASTM Specifications.

If you write maker identify as IEN - 6507

Worth a Second Look



Since '26 JOY electrical plugs and receptacles have been Industry's outstanding value for portable power transmission. Molded as trim, one-piece (Neoprene/rubber) units they can't crack or shatter . . . won't lose their shape and are amazingly resistant to falls, blows, acids, oils, moisture or sunlight. Thousands of styles and shapes ranging from "cartridge-size" models to mammoth round (S.P.B.) units used in marine and mining applications have been developed. NO question about it . . . the JOY electrical connector line deserves a "second look". Ask for your free copy of Bulletin MC108

M.E. 651.1

ILLUSTRATION SHOWS JOY ROUND STYLE PORTABLE PLUGS

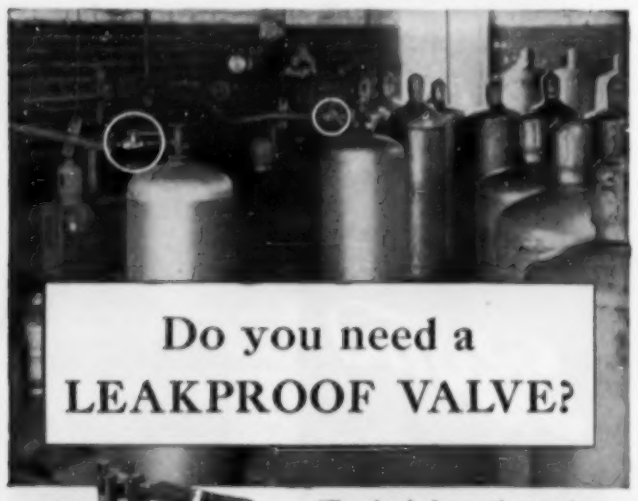
OVER 100 YEARS ENGINEERING LEADERSHIP

JOY MANUFACTURING COMPANY

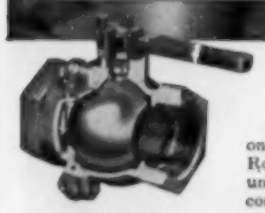
HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA

IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LTD., GALT, ONTARIO

If you write maker identify as IEN - 6508



Do you need a LEAKPROOF VALVE?



Patented

"Far ahead of any others we have used," says maintenance engineer of this propane plant.

Leakproof in a propane plant — *leakproof* on LP gas trucks — *leakproof* in a tannery — Rockwood Ball Valves are designed to operate under the roughest and most grueling of conditions. What are *your* conditions?

Remember, they're leakproof for a longer time, too — pay for themselves over and over during years of rugged service.

Other features — full, round flow; quick opening and closing; extra wear resistance. Tested and listed by Underwriters' Laboratories Inc. Write for complete details. It may pay you big dividends.

ROCKWOOD SPRINKLER COMPANY
426 Barlow St., Worcester 5, Mass.

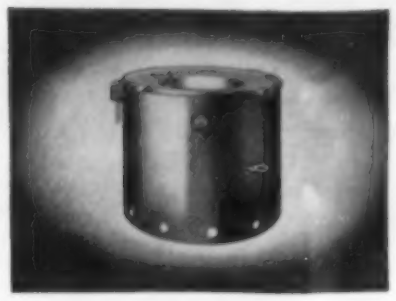
ROCKWOOD

ROCKWOOD *FULL-FLOW* BALL VALVES
THE FLOW IS AS ROUND AS THE PIPE ITSELF

If you write maker identify as IEN - 6509

MELTING . . Electric pot to handle babbitt, solder, lead

Source: WESTINGHOUSE ELECTRIC CORP. Box 2099, Dept. IEN, Pittsburgh 30, Pa.



No combustion fumes

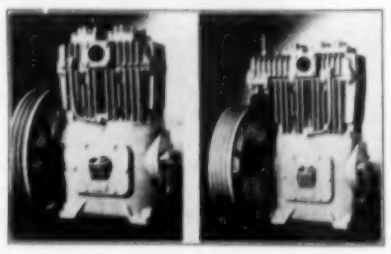
Three sizes for solder, at 150, 750 and 1,500 lb., and three for babbitt, at 170, 860 and 1,710 lb., are included in a new line of electric melting pots. A thermostat, with an immersion bulb in the metal, maintains correct temperature. The bulb is protected by a cast iron tube. Heating elements are spirally wound coils of nickel chromium wire threaded through ceramic insulator supports in the pots rating 150 to 860 pounds.

The helical coils are spaced and supported by refractory insulators bolted together and fastened to the alloy top ring casting on the larger pots. The latter arrangement forms a separate unit that can be removed for maintenance or replacement. Insulation inside the housing is made of light weight refractory brick.

If you write maker identify as IEN - 6510

COMPRESSOR . . Air cooled design, single and two stage, 100 and 200 lb.

Source: QUINCY COMPRESSOR CO. Dept. IEN, Quincy, Illinois



For general duty

Model 255, single stage, and Model 350, two stage, are new designs in the company's line of air cooled compressors. Both have 3½-in. stroke. The single-stage unit has 4½-in. bore. The two-stage design has 3¼ and 6-in. bores. Maximum piston displacement is 58 and 51 cubic feet. Maximum continuous pressure is 100 and 200 pounds. The two-stage design can be operated at 350 lb. intermittently.

The design is featured by the company's new Safe-Q-Lube mechanism which automatically unloads the compressor when the lubricating oil level is low, on compressors equipped with Loadless Starting. Both compressors can be specified with electric motor or gasoline engine drive, or both. Tank and base mounted assemblies, as well as the basic unit illustrated, are available.

If you write maker identify as IEN - 6511

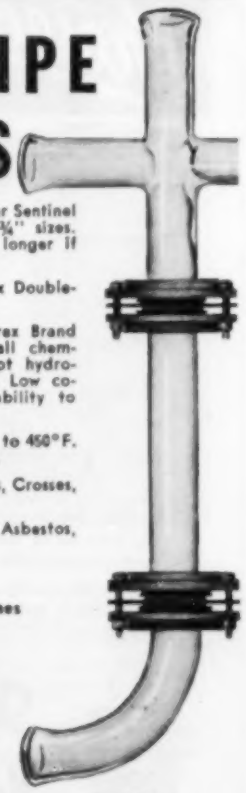
Guide rails for conveyors and packaging equipment are available with a permanent Teflon facing from United States Gasket Co., Box 468, Dept. IEN, Camden 1, N. J. The Teflon is permanently cemented to a steel backing. It minimizes friction, prevents marking work that comes in contact with it. Details are contained in Bulletin GR-301.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6512

SENTINEL

SMALL DIAMETER **GLASS PIPE and FITTINGS**



STOCK SIZES AND LENGTHS: Small Diameter Sentinel Glass Flanged Pipe in ¼", ⅜", ½", and ¾" sizes. Straight lengths to 72"; can be supplied longer if required.

Sizes larger than ¾", in Bulletin EA3—Pyrex Double-Tough Glass Pipe and Fittings.

Pipe and Fittings are fabricated from Pyrex Brand Glass Tubing. Corrosion-resistant against all chemicals and combinations of chemicals except hydrofluoric acid and hot concentrated alkalies. Low coefficient of expansion, gives remarkable ability to withstand thermal shock.

Normal operating temperatures up to 250°F. to 450°F. if precautions are taken. Pressures to 100 psi.

FITTINGS: 45° and 90° Elbows, Tees, U-Bends, Crosses, etc. Special Fittings to your specifications.

GASKETS: Teflon Envelopes, Teflon Snap-On, Asbestos, Gum Rubber, Neoprene, Koroseal.

NEW—PYREX GLASS TRAPS in all sizes, for drain and waste lines

SENTINEL GLASS CO.
HATBORO, PENNA.

Send for Bulletins SG 11 and name of nearest distributor

If you write maker identify as IEN - 6513

TOOL CRIB CONTROL

New illustrated bulletin presents step-by-step procedure used profitably in hundreds of plants

How it works to —

- Record each employee's tools or gages, preventing theft and loss;
- Recover idle tools;
- Cut crib inventories;
- Reduce tool breakage;
- Locate each tool, loaned or in crib;
- Eliminate delays, saving man and machine time;
- Stop arguments and otherwise speed service;
- With no increase in crib personnel—

All described in Folder A-510 IEN

Procedures also available for gages, gage inspection, bits, permanent loans, blue prints, etc. Readily adapted to unusual requirements.

Write for your copy today . . . specify procedures of particular interest

McCaskey INDUSTRIAL CONTROLS

PRODUCTION · INVENTORY · TOOLS · COSTS · MAINTENANCE

THE McCASKEY REGISTER DIV., *Victor Adding Machine Co.*
ALLIANCE, OHIO

Galt, Canada Watford, England

If you write maker identify as IEN - 6514

PRESSURE BLAST ABRASIVES

FOR ALL WET-BLAST EQUIPMENT!

★ *EASIER TO AGITATE!*
★ *WILL NOT PACK!*

75–5000 mesh range including aluminum oxide, quartz, silica flour, novaculite, garnet, etc.

Emulsifiers and inhibitors compounded with the abrasive . . . ready to use . . . no additives to buy or mix.

For use in all makes of wet-blast equipment.

Packaged in sturdy, fiber-board drums . . . 50 lbs., just right for a single operating charge.

Available from stock in all principal cities of U.S. and Canada . . . no freight charges.

Write for further information and the name of your nearest Pressure Blast distributor.

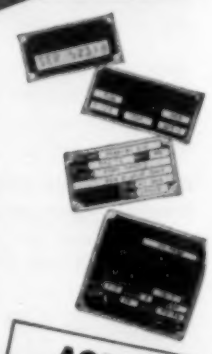
★ Developed by the manufacturers of Pressure-Blast wet-blasting equipment.

CRO-PLATE Company, Incorporated

747-3 Windsor Street
Hartford 5, Conn.

If you write maker identify as IEN - 6515

How To **Mark Name Plates In 1/5 the Time**



Cutting costs in these times is a good trick if you can do it. You can, on plates requiring detail marking, by using an Automark Electric Metal-Marking Typewriter. The operator lightly touches the key and the Automark does the rest, quickly and automatically. No dial to turn—no lever to pull. Marking output is increased five times and worker fatigue is greatly reduced. Write today for Bulletin 8-16.

AUTOMARK
Electric Metal-Marking
TYPEWRITER

Manufactured Exclusively By

AGENTS
Desirable territories open for responsible representatives. Write giving complete information, lines carried and territory covered.

DEFIANCE MACHINE & TOOL COMPANY
1926 South Vandeventer Ave. • St. Louis 10, Mo.

If you write maker identify as IEN - 6516

MAXIM SNOW THROWERS

THE MAXIM SILENCER COMPANY
71 HOMESTEAD AVENUE • HARTFORD 1, CONN.

If you write maker identify as IEN - 6517

GET MORE OUT OF YOUR SPRAYING EQUIPMENT WITH LESS POWER

For spraying, washing, rinsing, cooling and air conditioning, Yarway Spray Nozzles will improve the efficiency of your spray equipment.

There are no internal vanes or other restrictions to clog or hinder the flow.

Yarway Spray Nozzles are available in two types—the Yarway Involute producing fine hollow cone spray with minimum energy loss, and the Yarway Fan-spray for flat fan-shaped spray with time-saving slicing action for cleaning.

Wide range of standard sizes and capacities. Made of metal castings or machined from solid bar stock.

The 20-page Yarway Spray Nozzle Bulletin contains not only complete details on Yarway Spray Nozzles and Fittings, but also much helpful information on the many uses for spray nozzles. Ask for a free copy—Bulletin N-617.

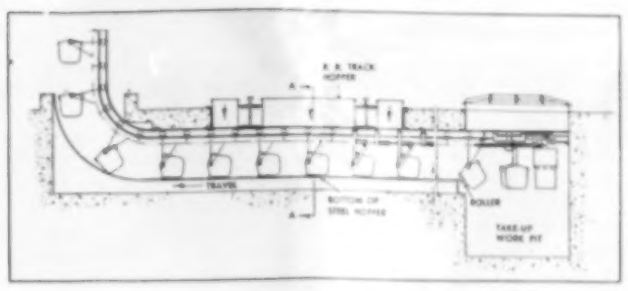
YARNALL-WARING COMPANY
122 Mermaid Ave., Philadelphia 18, Pa.

YARWAY / spray nozzles

If you write maker identify as IEN - 6519

CONVEYING . . Pivoted carriers ride trolleys on chain in closed loop

Source: **HAPMAN CONVEYORS INC.**
630 Gibson St., Dept. IEN, Kalamazoo, Mich.



Bulletin MT-254

Multiplane is a new overhead trolley conveyor in which an I-beam track and universal type chain can be installed to lie in a closed loop to include horizontal, inclined and vertical turns. The trolley supported chain is characterized by its patented Stif-Arm carrier hangers on which the carriers are trunnion mounted.

The arrangement holds each carrier away from the chain so it is free to ride in loaded position and equally free to be tilted for loading and unloading by means of rollers located at predetermined points in the conveyor loop. These rollers can be set for continuing action as each carrier comes by or can be adjusted out of active position to meet requirements.

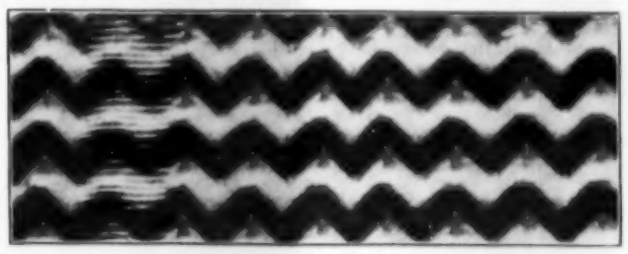
The conveyor is particularly suited to handle bulk materials but its bucket type carriers can be changed to employ pivoted trays for work in process. Capacity, based on handling bulk material, is to 10 cfm. depending on the chain speed and the carrier spacing. Standard speed is 60 fpm. Three I-beam track sizes are 3, 4 and 6 in. for buckets with capacity at ¼, ½ and ¾ cubic foot.

Minimum turn radius is 24, 36 and 48 inches. The carriers can be made of steel, stainless steel or other specified material and can be equipped with renewable wear strips. Drive can be supplied in either sprocket or caterpillar design.

If you write maker identify as IEN - 6520

PACKAGING . . Cushioning material protects fragile products in transit

Source: **SHERMAN PAPER PRODUCTS CORP.**
1420 Oak St., Dept. IEN, Newton Upper Falls 64, Mass.



Free sample upon request

Sherm-A-Pak is a new paper cushioning material formed under a combination of pressure and heat. The process results in excellent cushioning characteristics for continuing protection of fragile products during long transportation movements in either dry or damp weather. The material is available in a range of weights. It is supplied in rolls, sheets or die cut pieces to specification.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6521

THE RIGHT BOX CAN DO A JOB FOR YOU

SPECIAL PACKAGING—not a throw-away box—where box is a premium or a necessity for assured protection of product in shipping or use.

Use Lite-TUFF PLASTIC BOXES

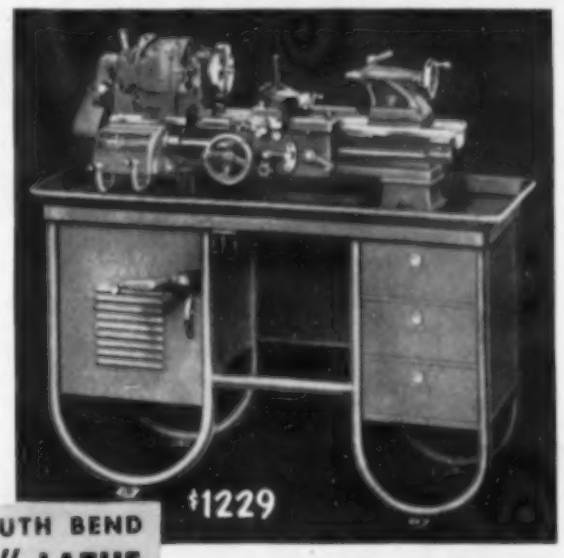
Lite-TUFF Standard Boxes and Containers of Non-Flam* lightweight plastic made of approved material are no fire hazard. They are available in a wide variety of compartment arrangements. LOW DIE COST ON CUSTOM MADE.

- Very tough—will not crack or shatter in normal use.
- Stainless steel hinges.
- Resistant to most chemicals—samples supplied for tests.
- May be beautifully heat embossed.
- All transparent or color combinations.
- Make your own compartment layout on our PLOT PLAN Sheets.
- State your problem—let us solve it.

Full information and Plot Plan Sheets sent upon request . . . Dept. A5
* Reg. U. S. Pat. Off.

SHOE FORM CO. INC., Auburn, N. Y.

If you write maker identify as IEN - 6522



SOUTH BEND 10" LATHE

This versatile lathe is an exceptional value. It has the accuracy, speed and operating ease to simplify the machining of a wide variety of precision parts. It can be depended upon to deliver the same high performance year-after-year with a minimum of maintenance. 1" collet capacity. Priced from $1229, less electrical equipment, f.o.b. factory. Time payment terms: 10% down, balance 12 or 18 months. *Write for complete information.*

SOUTH BEND LATHE
SOUTH BEND 22, INDIANA
Building Better Tools Since 1906

If you write maker identify as IEN - 6523

NEW WAY TO LOWER SLING COSTS

Let us send you this new bulletin on ROEBLING ALL-PURPOSE SLINGS with the Tapered Sleeve Splice

YOU SAVE every way with these slings: 1) they cost less, are ready for the job; 2) they're flexible, easy to handle, tough, long lasting, develop the full catalog strength of the rope. And now you can get All-Purpose Slings with a heavy steel galvanized thimble, plus attached weldless hooks, links or shackles, if desired. They're available with loops in standard lengths and sizes; stocked by Roebling distributors and branches...Order All-Purpose Slings with the Tapered Sleeve Splice for lower sling costs; and send for new descriptive bulletin. John A. Roebling's Sons Corporation, Trenton 2, N. J.

Subsidiary of The Colorado Fuel and Iron Corporation CFI

ROEBLING

If you write maker identify as IEN - 6524

REVOLVATOR GO-GETTER Lift Efficiency

Door-To-Door Warehouse Handling Efficiency

For the efficient flow of goods within and without a plant—from production to storage—to shipping—there is no lift truck on the market today that surpasses the Revolvator Go-Getter line.

Illustrated above is the high lift model Go-Getter—a favorite of the food producers—accepted throughout all industry. In 2000-3000 lb. capacities—remarkably adept in narrow aisle work, the Revolvator Go-Getter high lift truck permits great economies in warehousing.

Write for the full facts today.

REVOLVATOR CO.
8759 Tonnele Ave. North Bergen, N. J.

If you write maker identify as IEN - 6525

MR. PRODUCTION FOREMAN:

YOU, TOO, WILL BE ASKED THIS QUESTION SOONER OR LATER, BETTER CHECK UP BEFORE IT'S TOO LATE!
WE'LL SEND YOU COMPLETE INFORMATION AND PRICES VIA RETURN AIR MAIL!
Phone, wire or write us RIGHT NOW!

Severance TOOL INDUSTRIES INC.
740 Iowa Avenue, Saginaw, Michigan

If you write maker identify as IEN - 6526

with

BIG JOE® LIFT TRUCKS

There are *no dispatching bottlenecks* . . . no special labor problems . . . no extra installation costs . . . no large maintenance costs when "In-Between Handling" methods are applied to your plant.

You can *custom build* your materials handling system by selecting from more than 40 "BIG JOE" foot and battery operated hydraulic lift trucks.

WRITE FOR OUR BOOKLET ON IBH* "HYDRAULIC HANDLING FOR EVERY DEPARTMENT"

BIG JOE MANUFACTURING COMPANY
900-02 West Jackson Blvd., Chicago 7, Illinois
© 1954 Big Joe Mfg. Co.

If you write maker identify as IEN - 6527

HOW TO SELECT STRAPPING TOOLS

● Complete catalog offered by Brainard Steel lists applications of all types of tools and accessories for tensional and heavy-duty steel strapping. Includes specifications; fully illustrated. With the Brainard Strapping System, you can improve efficiency of packaging, carloading, palletizing, bundling, export crating, and warehousing —Brainard's complete line covers over 1000 kinds of strapping, tools and accessories. Get the complete story now.

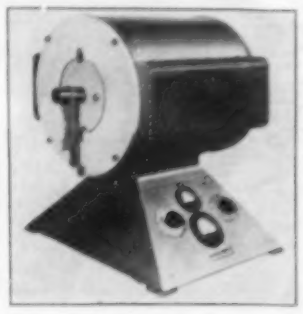
Brainard
STEEL DIVISION
SHARON STEEL CORPORATION

For Catalog write:
BRAINARD STEEL DIVISION
Griswold Street, Dept. II-6
Warren, Ohio

If you write maker identify as IEN - 6528

HEATING . . Electric furnace, combustion tube design for laboratory

Source: HEVI DUTY ELECTRIC CO.
4212 W. Highland Blvd., IEN, Milwaukee 1, Wis.



Bulletin 254

Temperature rates to 2,600 deg. F. for this new furnace. It is suited particularly for carbon and sulfur analyses where combustion with the sample is difficult as in high alloy tool steels and heat resisting steels. The self-contained assembly consists of the furnace and a base with the required controls and instruments. Silicon carbide heating elements are located above and below the combustion tube. The tube is available in various diameters to 2 in., the different sizes applying after changing plug inserts in the furnace ends.

An indicating pyrometer, a 48-step tap changing transformer, switches, ammeter and terminal board are mounted on a drawer-like frame that slides out of the base for maintenance purposes. Chamber length is 12 and 20 inches. One or two zones of temperature control, the latter with duplicate instruments, can be supplied.

If you write maker identify as IEN - 6529

PRESS TOOLS . . Strip stock reel minimizes manual handling at a press

Source: JACO DEVICES INC.
91 High St., Dept. IEN, Hingham, Mass.

Anti-friction bearings

New base has been designed for the 24-in. size of the company's automatic Stock Reel, previously described IEN-5631-51. The base changes the previous angle of feed and permits the reel to take advantage of the natural spring of the uncoiling stock.

The reel requires no attention after it has been loaded and the strip stock has been threaded through its guide and into the press feed. Three sizes in the line include 24, 30 and 36 inches. The reel takes stock weight to 250 pounds.

If you write maker identify as IEN - 6530

Manufacturers in the Chicago area who require steam in their operations need not worry about shutdown, if their steam generators run into trouble, now that Page Boiler Co., 815 Webster Ave., Dept. IEN, Chicago 14, Ill., has set up a fleet of mobile generators ready to go anywhere in the area. The fleet carries boilers rating from 15 to 100 hp. Each is ready to connect into the line and go to work.

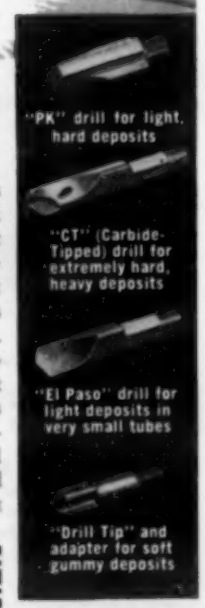
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6531

with

LAGONDA SUSPENSION TYPE CLEANERS

Teamed with the right drill or brush, this suspension type cleaner makes short work of soft or hard deposits in small straight tubes. It can be air or electric driven. The improved motor has two ball-type thrust bearings for absorbing push and pull forces imposed on the cleaner during operation. The "squeeze" trigger control assures instant regulation from wide open to shut off. Brushes are available for light deposits in soft copper or brass tubes. Drills available are illustrated at right. For additional information, call your local Elliott Field Engineer, or write for bulletin to Elliott Company, Springfield, Ohio.



ELLIOTT Company
Y4-10

STEAM TURBINES • MOTORS • GENERATORS • DEAERATING HEATERS • EJECTORS • CONDENSERS
CENTRIFUGAL COMPRESSORS • TURBOCHARGERS • TUBE CLEANERS • STRAINERS

If you write maker identify as IEN - 6522

LAUGHLIN Double Clevis Link

*DOUBLE CLEVIS LINK

Connects chain to links, rings, hooks. Make slings, hitches, repairs in the field - **no welding - no blacksmith work**

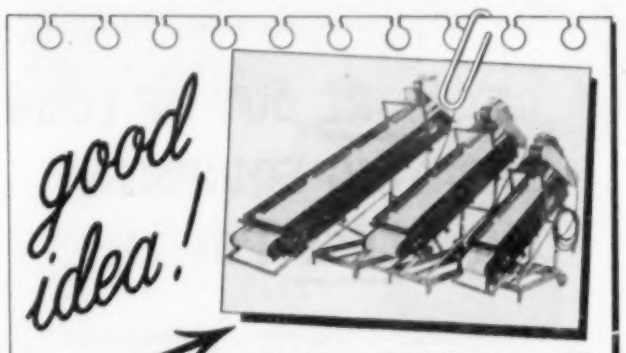
FAST - SAFE - EASY No special tools needed; just remove cotter and bearing pins, attach clevis and replace pins. New exclusive cotter guard protects your hands. Stronger than proof coil, BBB and high test chain.

1/4", 5/16" - 3/8", 7/16", 1/2" sizes.

WRITE FOR CATALOG 155, showing complete line of 1500 types and sizes of drop forged wire rope and chain fittings.

THOMAS LAUGHLIN COMPANY
61 FORE STREET, PORTLAND, MAINE

If you write maker identify as IEN - 6533



good idea!

SPEED PRODUCTION OF SMALL PARTS 50% or more and reduce costs 20% to 60% with versatile ARR-O-PARTS VEYORS . . . rugged, compact power belt units for industrial handling problems. Snug 'em up to presses to flow stampings steadily into tote boxes — saving time and floor space, freeing operators for production. Mount 'em horizontally for automatic handling between work stations. Available in nine standard models for virtually unlimited range of applications. Write for specifications, prices and name of nearest ARROW distributor — a materials handling *specialist.*

Full facts on all ARROW power and gravity conveyors. Write to:

arrow PRODUCTS, INC.
106 Arrow Bldg. 417 Front St. Grand Rapids, Mich.

If you write maker identify as IEN - 6534

The All New MOBILIFT 4000 Pounder

Has *Everything* You Want in a "Sit-Down" FORK LIFT TRUCK

MODEL D-424
4,000 lbs. capacity at 24" Load Center
83" hydraulic mast lift height 108"

Check these trend-setting features . . .

- CHRYSLER 65-bhp 6 cyl. GAS ENGINE.
- CHRYSLER GYROL FLUID COUPLING.
- MOBILIFT CONSTANT-MESH TRANSMISSION with a Push-Pull Lev-R-Matic Control for forward and reverse — No Clutch Pedal — No Gears to Shift — 2 speeds forward, 2 reverse
- MOBILIFT FULL-FLOATING DRIVE AXLE.
- BALL-BEARING WORM & NUT TYPE STEERING.
- HYDRAULIC BRAKES.
- EASY TO GET ON AND OFF — NO OBSTRUCTIONS.
- FREE ACCESS FROM LEFT OR RIGHT SIDE.
- ONE-PIECE HOOD RAISES FOR EASY SERVICE ACCESSIBILITY.

Write for complete details

LAMSON MOBILIFT CORP.
835 S. E. MAIN STREET, PORTLAND 14, OREGON
2317 W. 18TH, CHICAGO • 730 PATTERSON, E. RUTHERFORD, N. J.
2724 TAYLOR STREET, DALLAS • 2730 SAN PABLO AVE., BERKELEY
1113 SPRING STREET, N.W., ATLANTA

If you write maker identify as IEN - 6535

MORSE DeLUXE 500 Portable

ROTATOR

- *MIXES*
- *BLENDS*
- *TUMBLES*
- *CLEANSES*

Faster and at less cost!

The patented Morse De Luxe 500 Rotator will handle 1 to 55 gal. containers, weighing to 500 lb. They revolve safely, smoothly, efficiently at 10, 20, 40 rpm on this powerful, compact, portable, motorized unit. Cuts cost of mixing, blending, tumbling, cleansing. Easily moved and loaded by one man. Has ¾" dia. power driveshaft with self-aligning ball bearings. Four adjustable 4" dia. Neoprene-tread drive wheels. Fully enclosed worm-gear drive with 30-1, 15-1, 7½-1 reductions. Weighs 137 lb. Delivered complete with motor, drive mechanism and tipping lever. Write for Bul. #1053 and catalog, showing full Morse line of Drum and Barrel handling equipment.

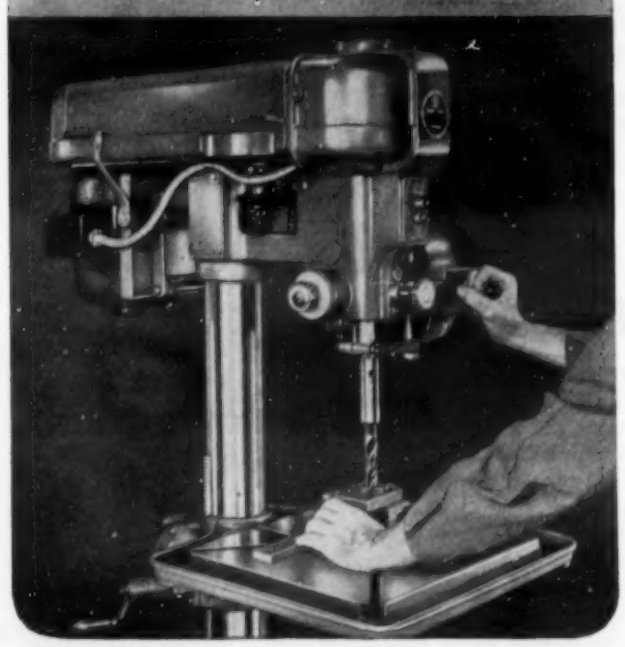
MORSE *MANUFACTURING CO.* INC.
755 West Manlius St. East Syracuse, N. Y.

If you write maker identify as IEN - 6536

walker-turner

LIGHT-HEAVYWEIGHT
PERFORMANCE WINS NEW RECOGNITION

20" Drill Presses — Hand or Power Feed — are available in Bench, Floor or Multiple Spindle Models.



The word is getting around about the past performance of Walker-Turner LIGHT-HEAVYWEIGHTS. A newly completed check of leading industries reveals this pertinent fact: *of the 250 largest manufacturers, no less than 93% right now are Walker-Turner users.*

They find in LIGHT-HEAVYWEIGHTS the features and engineering usually available only in large and costly equipment. Take this Walker-Turner 20" Drill Press, for example. It has a heavy, one-piece cast iron head; a 10-spline spindle 1" in diameter; and 4 heavy-duty, precision ball bearings—to name just a few of its fine features that make for top quality...at far from top price.

There's much more to Walker-Turner's LIGHT-HEAVYWEIGHT story that our factory-trained Distributor in your area would like to tell you. You'll find him an expert on industrial equipment, a good man to know. And he's as near as your phone. So why not call him, or write us for his name and more information—today!

WALKER-TURNER
• DIVISION •
KEARNEY AND TRECKER CORPORATION
PLAINFIELD, N. J.

DRILL PRESSES — Hand and Power Feed • RADIAL DRILLS • Wood and Metal Cutting BAND SAWS • TILTING ARBOR SAWS • RADIAL SAWS • JIG SAWS • LATHES • SPINDLE SHAPERS • JOINTERS • BELT AND DISC SURFACERS • FLEXIBLE SHAFT MACHINES

If you write maker identify as IEN - 6538

WELDING . . Gas shielded arc gun, water cooled, for manual application

Source: AIR REDUCTION SALES CO.
60 E. 42nd St., Dept. IEN, New York 17, N. Y.

For thin metals

Aluminum in thin gages, copper base alloys, magnesium, stainless steel are materials that can be assembled with this new Airco H12A Heliweld gun. It is made of plastic for light weight and to withstand rough treatment. It is balanced to minimize effort in continuous application. It is compact to get into difficult locations and water cooled.

Rating is 125 amp. with operation on ac. or dc. Overall length is 7½ inches. Weight is 4 ounces. Interchangeable electrode caps, 2, 3 and 7 in. in length, and an assortment of ceramic nozzles are available with the gun. The water cooled power cable measures 12 ft. in length. Four collets take 0.02 to 0.0937-in. tungsten electrodes.

If you write maker identify as IEN - 6539

MARKING . . Self-adhesive tape in eight bright colors, four widths

Source: VAN CLEEF BROS. INC.
7800 Woodlawn Ave., Dept. IEN, Chicago 19, Ill.

Available from stock

Coding, decorating, indexing, packing, construction of bar charts and color graphs, are typical points of application for the new Dutch Brand Vinyl Color Tape. The plastic material is resistant to attack by acids, corrosive chemicals, grease, oils. Four available widths range from ⅜ to 1 inch. The eight colors are black, blue, gold, green, red, silver, yellow, white. Breaking strength is 15 lb. per inch of width. Adhesive value is 28 oz. per in. of width.

If you write maker identify as IEN - 6540

ENGINE . . Single cylinder gasoline, air cooled, 3.6 hp. at 3,600 rpm.

Source: KOHLER COMPANY
1230 High St., Dept. IEN, Kohler, Wis.

List is $73.80

The company announces availability of its Type K90T air cooled engine with a retractable starter forming part of the assembly. A T-handle is pulled out to start the engine and is released for retraction back into its housing at the end of the crank shaft. The engine weighs 40 lb. and is regularly equipped with a fly ball governor, oil bath air cleaner, silencer type muffler, and a 1-gallon fuel tank.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6541

Safeguards plant and personnel while **speeding up** *materials handling!*

trouble-free . . . 335° swivel
APPLETON REELITE
Traveling Power Supply

A Size and Model for every job!

Also Manufacturers of:

• The new "YS" Reelites are quality products throughout . . . built for long uninterrupted service. They are one of many trouble-free APPLETON Reelites available to industry to supply traveling power on any job regardless of size.

For better materials handling in *your* plant, find out about APPLETON Reelites. Write for Bulletin 504, *today!*

Sold Through Electrical Wholesalers

APPLETON ELECTRIC COMPANY
1716 Wellington Ave., Chicago 13, Ill.

If you write maker identify as IEN - 6542

KODAGRAPH MICRO-FILE EQUIPMENT

Here's everything you need for a low-cost, trouble-free microfilming operation . . . one that will meet *your* individual requirements.

- **Kodagraph Micro-File Machines**—four separate models designed to meet a variety of conditions. *Each* a high-precision unit which can be operated by anyone.

- **Kodagraph Micro-File Film**—extremely fine grained, high resolution. Assures sharp, crisp rendering of all details.
- **Kodagraph Film Readers,** which permit you to view your films quickly, conveniently.
- **Kodagraph Micro-File Enlarger,** which enables you to make paper enlargements from 16mm. and 35mm. microfilms which are comparable in clarity to the originals.
- **Kodagraph Print Film**—ideal for making positive copies of negative microfilm records.

Write today for free illustrated booklet giving full information.

EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.

Kodak

If you write maker identify as IEN - 6543

Output Up Because Her Hands Are Safe

Operator confidence soars—and so does production—with the Schrader Press Control. Definitely a two-hand device, it is designed so that the hands that feed the die must also operate the press. Neither valve can be tied down to get one-hand operation.

This *increased safety* of Schrader's Control lets operators build a worry-free rhythm that puts new speed in your presses in just a short time.

Get details on complete Schrader Two-Hand Press Controls—and other Schrader hand and foot-operated controls. Write for Pneumatic Control Folder A-278 today.

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Avenue, Dept. D-40, Brooklyn 38, N. Y.

If you write maker identify as IEN - 6544

Backstand belts triple production!

Send for Armour's free booklet to learn this amazing method!

Metal polishing has hit a new production high with backstand belts. They cut faster, cooler than set-up wheels—and cut down on the number of operations. In some plants, backstand belts have *tripled* production! To learn more about this modern method, send for Armour's free booklet, "Backstand-Belt Polishing."

E6

Mail this coupon today

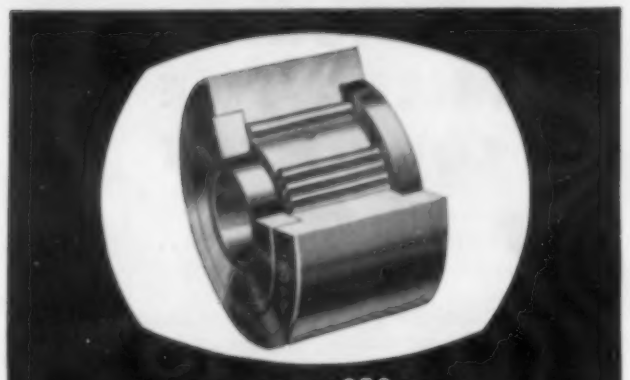
Please send booklet "Backstand-Belt Polishing"

Name ..... *Title* .....
Company .....
Address .....
City ..... *Zone* ..... *State* .....

ARMOUR *Coated Abrasives*

Armour and Company • North Benton Road • Alliance, Ohio

If you write maker identify as **IEN - 6545**



versatility
for cam follower mounting provided with
MULTIROL® CYR bearings

With this series it is possible to utilize the full advantages of Multirol Cam Follower bearings in a yoke mounting. In the CYR bearing an inner race replaces the stud to further increase the adaptability of precision cam followers in automatic machinery requiring cam action or guide and support rollers.

Send for McGill Catalog No. 52

McGILL® precision bearings

McGILL MANUFACTURING CO., INC. 100 N. Lafayette St. Valparaiso, Indiana

If you write maker identify as **IEN - 6546**

Super Sweeper Snaps Up Nails, Tacks and Scrap

From Factory Floors, Lots, etc.

New lightweight **PERMANENT MAGNET** *receives enthusiastic reception for maintenance help.*

Increasing problem to maintenance executives caused by dangerous tramp iron is solved by the Eriez Super Sweeper. Harmful, and often expensive, staples, nails and pieces of scrap iron are quickly snapped up by Super Sweeper's powerful ALNICO action.

Super Sweeper is light and easy to handle . . . sweeps large areas with maximum efficiency. Use it indoors or outdoors. It is a self-contained unit. No electric current. Your first cost is your last cost!

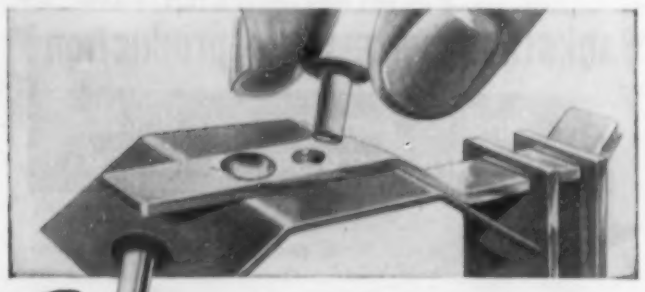
Thanks to Super Sweeper's design it can be PULLED by a jeep, truck, etc. . . . or PUSHED by a man . . . or SUSPENDED from a lift truck. The tubular steel handle can be removed. Wheels, fitted with puncture-proof 8.00" x 2" tires, are also removable.

Three strengths and four magnet widths (24", 36", 48" and 60") make certain that there is a Super Sweeper to fit your exact requirement. Write for Bulletin on this versatile trouble-saver.

ERIEZ
MANUFACTURING COMPANY
81F Magnet Drive, Erie, Pa.

ERIEZ

If you write maker identify as **IEN - 6547**



You Enjoy The Economy Of Quality With Townsend Tubular Rivets

Townsend tubular rivets have the uniform physical properties and accurate dimensions you need for efficient assembly. They are made of wire of the proper grade and analysis, drawn to specifications in our own wire mill. This assures positive control of quality giving you uniform ductility for ease of setting.

Townsend tubular rivets feed readily into any make automatic machine—may also be set easily by hand. Their appearance is good—adds to the attractiveness of your product. They weigh less than many other types of fasteners—reduce product weight.

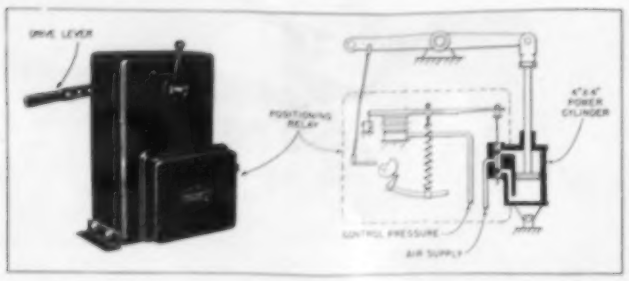
These quality rivets are available in a wide range of sizes in steel, brass, aluminum and copper. To enjoy the economy of quality, specify Townsend tubular rivets for your assembly operations.

Townsend Company
NEW BRIGHTON, PENNSYLVANIA

If you write maker identify as **IEN - 6548**

CONTROL . . Pneumatic positioner for dampers, governors, rheostats

Source: BAILEY METER CO.
1050 Ivanhoe Road, Dept. IEN, Cleveland 10, Ohio



Bulletins CA040 and CA942-B

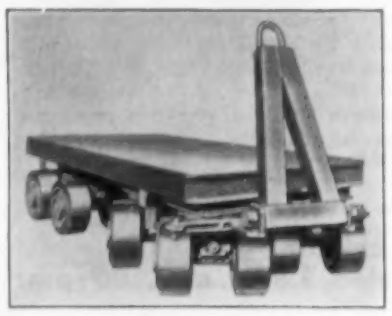
Pneumatic signal from a control instrument, governing variables such as draft, temperature, flow, pressure, actuates a positioning relay in this new control. The relay, in turn, positions a piston operated lever arm. The assembly measures 10 by 11 by 19 in. and can be installed in any position on a column, pipe or flat surface. Time required for full 75-deg. travel is adjustable.

The 4-in. piston stroke provides a torque of 75 foot pounds. Operation is on standard SAMA signal ranges of 3 to 15 lb. and 3 to 27 pounds. The control can be equipped with suitable connecting linkage from stock. It lists at $210 with the enclosure, the positioning relay and a hand operator.

If you write maker identify as **IEN - 6549**

TRUCK . . Heavy duty trailer rates 30 ton on its sixteen wheels

Source: PHILLIPS MINE & MILL SUPPLY CO.
2300 Jane St., Dept. IEN, Pittsburgh 3, Pa.



Limits floor load

Eight articulated axles are mounted with sixteen wheels beneath this new Type TFUS-600 trailer to carry heavy loads over rough ground. The wheels are equipped with 15 by 7-in. solid rubber tires. Their centers are semi-steel. Mounting is on Timken roller bearings lubricated through Alemite fittings. Quadruple caster type synchronized steering provides stable action. The deck is made of ⅜-in. steel on 5-in. channels and I-beams as supports.

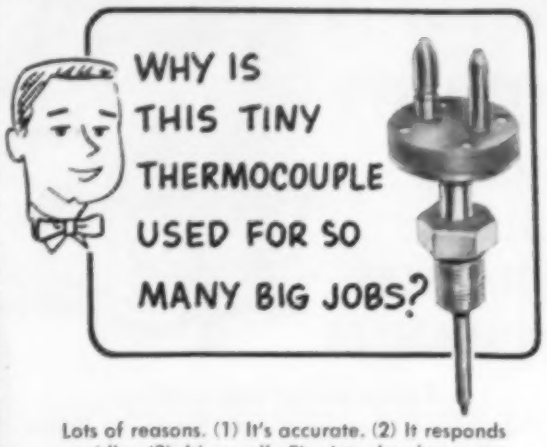
If you write maker identify as **IEN - 6550**

Adhesion between paint and an old or new concrete floor is promoted by application of a new floor etching liquid. It is made by Tropical Paint & Oil Co., 1246 W. 70th St., Dept. IEN, Cleveland 2, Ohio. The floor is cleaned and the liquid is spread with a stiff broom. The etching action is complete in about 30 minutes ready to be flushed with clean water, swept or mopped. The pores in the concrete are opened to grip the paint.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6551**

If you write maker identify as **IEN - 6552**



Lots of reasons. (1) It's accurate. (2) It responds rapidly. (3) It's small. Fits into hard-to-get-at places. (4) Connects and disconnects quickly. (5) It's durable. Stainless steel protection tube resists corrosion. (6) Made in a range of types and sizes: elements of IC, CC, or CA; brass or stainless NPT bushings; immersion lengths from 1" to 48" or more; protection tube diameters from 1/16" to 1/4".

T-E makes many thermocouples for almost any kind of temperature-measurement. Interested? Write for Bulletin Q.

Thermo Electric Co., Inc.
SADDLE RIVER TOWNSHIP, Rochelle Park P.O., NEW JERSEY
CANADA • THERMO ELECTRIC (Canada) Ltd., BRAMPTON, ONT.

If you write maker identify as **IEN - 6553**

You need U. S. GRIZZLY Uskorona-insulated Power Cables

Here's an illustration showing how ozone can chew up a sturdy, rugged cable. This can never happen with United States Rubber Company's famous Grizzly® Power Cables insulated with Uskorona® compound which prevents electrical failure caused by ozone (Uskorona-1 oil base compound or Uskorona-2 butyl rubber compound). Uskorona meets (and in many ways exceeds) the applicable IPCEA specifications for ozone-resistant rubber insulation.

As the only wire manufacturer that grows its own natural rubber, produces its own synthetics and makes its own plastics (as well as the bulk of its own rubber-compounding chemicals and ingredients), United States Rubber Company is able to make certain that only the finest materials are used in the insulations for its own wires and cables. These materials are expertly compounded according to methods devised after years of research and experimentation in "U.S." laboratories. Finally, U.S. Rubber's practical "know-how" contributes its important part to the uniform high quality of every "U.S." insulation. This "know-how" is the result of 68 years of successful manufacture of electrical wires and cables, and over a century in the making of fine rubber products.

U. S. Grizzly Uskorona-insulated Power Cable, 5,000 Volts, type RR, 3 conductor, shielded, Neoprene jacket.

Send for free catalog giving full information about U. S. Electrical Wires and Cables.

US RUBBER

UNITED STATES RUBBER COMPANY
ELECTRICAL WIRE & CABLE DEPARTMENT
ROCKEFELLER CENTER, NEW YORK 20, N. Y.

If you write maker identify as IEN - 6555

New! Low-Cost! Wide-Range!

VARIABLE Speed Sheaves

Easily Attached to Any Machine

1/15 TO 15 HP.
RATIOS UP TO 8:1

● Simple, sturdy Speed Selector Sheaves are applied to any machine in only a few minutes . . . giving you wide-range speed control at extremely low cost. You get wide speed variations with standard V-belts, since two variable pitch sheaves are used. Eliminates bulky sliding motor bases, movable jackshafts and wide, high-cost special V-belts.

- Standard V-belts
- Automatic belt alignment
- Fixed shaft centers
- LOW COST

Write FOR FREE BULLETIN

SPEED-SELECTOR INC.

118-A Noble Court • Cleveland 13, Ohio

If you write maker identify as IEN - 6556

motor design problem?

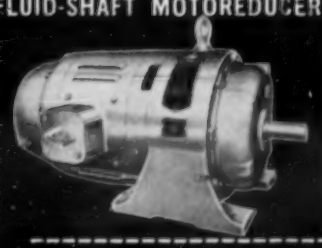
...maybe one of these REULAND "specials" will solve it!

FLUID-SHAFT MOTOR

(Cutaway View)

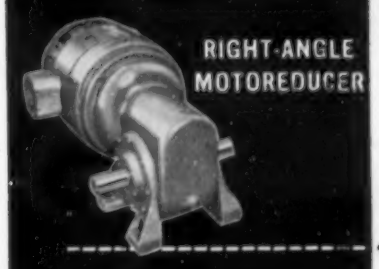
Motor with internal fluid coupling. Provides smooth load acceleration. More compact than separate motor and coupling. Assures perfect alignment. Will start heavier loads than standard motors of same horsepower. Used on cranes, conveyors, etc.

FLUID-SHAFT MOTOREDUCER



Consists of Reuland Fluid-Shaft motor and gear reducer as one compact unit. Converts the motor's conventional high speed into a slow speed, high torque output. Provides smooth starts. Prevents equipment jamming. Used on cranes, hoists, car pullers, etc.

RIGHT-ANGLE MOTOREDUCER



Consists of Reuland motor and worm gear reducer. Provides unlimited mounting versatility. Permits use of 1 high speed and 2 slow speed power-take-offs, if desired. Ideal for designing into cramped quarters. Also available with Fluid-Shaft drive motor.

THROUGH-SHAFT MAGNETIC BRAKE

"Doughnut" type design allows extension of shaft entirely through brake. Permits use of TWO output shafts per motor. Can be mounted on the input or output shafts (or both) of Fluid-Shaft motors and motoreducers. Only 6 major parts...self adjusting... half usual length.

OVER 600 SPECIAL ELECTRIC MOTOR DESIGNS

Whatever your drive problems may be, there is a good chance that the Reuland "library of specials" contains a unit that is already tailored to your needs. Its availability will save development work and put you in production faster.

Write today, outlining your particular problem. No obligation, of course.

REULAND ELECTRIC COMPANY

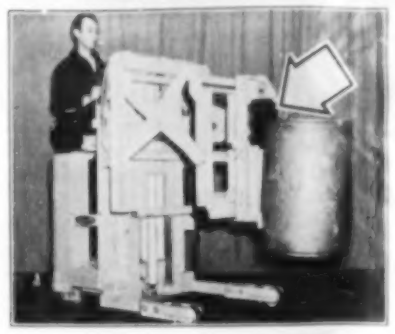
WESTERN DIVISION—Alhambra, Calif. • EASTERN DIVISION—Howell, Mich.

DISTRIBUTORS IN ALL PRINCIPAL CITIES

If you write maker identify as IEN - 6558

TRUCK . . Barrel attachment extends uses for Reach-Fork truck

Source: RAYMOND CORPORATION
35-124 Madison St., Dept. IEN, Greene, N. Y.



"Boardinghouse reach"

Barrels and drums can be stacked along aisles measuring 6 ft. in width when the company's new barrel handling attachment is employed with its Reach-Fork power lift truck, previously described IEN-4816-53. The attachment grips a barrel or drum under prssure and releases when the load is set down. It has capacity to 1,000 pounds. It is interchangeable with the elevating forks, for pallet handling, as in the original design.

The truck is characterized by the pivoted arm support on which the forks or barrel attachment mounts. These arms move up and down as a unit for vertical elevation to 51 in. of free lift height. They also pivot at their centers, after a load has been brought to a predetermined elevation, to move the load forward a maximum of 24 in. horizontally or to reach forward through that distance, pick up a load and retract.

If you write maker identify as IEN - 6559

MOTOR . . Miniature dc. unit, 1/200 or 1/50 hp. on 6 or 220 volts

Source: SMALL MOTORS INC.
2076 Elston Ave., Dept. IEN, Chicago 14, Ill.

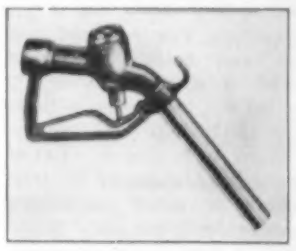
Bulletin 953 upon request

Model PM1 designates a new permanent magnet two-pole motor that has been added by the company to its line of miniature units. It measures 1⅛ in. in housing diameter and 2⅜ to 2⅞ in. in length without the shaft. It measures ⅛ in. in diameter and extends from one end of the frame. The motor is available for flange, ring or clamp mounting with speeds at 5,000 to 30,000 rpm. Torque ranges upward from 2 ounce inches. Weight is 5 ounces.

If you write maker identify as IEN - 6560

VALVE . . Hose shutoff nozzle, all brass or aluminum with brass cap

Source: ENTERPRISE BRASS WORKS CORP.
2814 McCracken Ave., Dept. IEN, Muskegon, Mich.



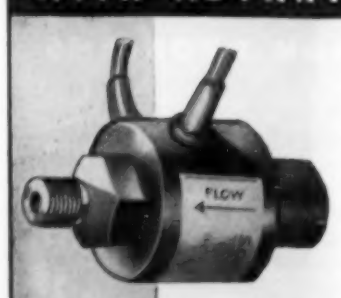
For general use

Model 400, made of brass, and Model 401, with an aluminum body and a brass cap and brass mechanism, are new in the company's line of utility nozzles. Pressure holds the port in closed position until the handle is depressed to unseat the O-ring type of disc. The valve stem is packed with an O-ring. The body is threaded for ¾ or 1-in. pipe connections.

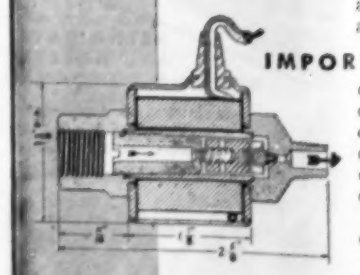
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6561

SOLENOID VALVES WITH ADVANTAGES PLUS



This valve of unique and practical design has proved itself in the past seven years to have extreme endurance and reliability. Important parts are stainless steel and no gaskets are used whatsoever. All parts silver brazed for rigidity. Look no further for a solenoid valve that will give years of trouble free, efficient service. Write today for full information. Samples available for inspection and test.



IMPORTANT FEATURES:

- All brazed construction
- No mounting brackets
- Weight 5 ounces
- Positive seal at any pressure
- Operates in any position
- Operates up to 1000 cycles per minute
- Power consumption 1 to 3 watts
- Pressure up to 200 p.s.i.
- Straight through flow

Specialty PRODUCTS CO., INC.
3725 Monitor Ave. • Minneapolis 16, Minnesota

If you write maker identify as IEN - 6562

WATER PICK-UP with SPENCER HARTFORD VACUUM

Any Spencer Vacuum System will pick up liquids—after scrubbing, accidental spillage or floods and from sump tanks. For large volume pick up, special collector tanks from 6 to 100 gallons capacity or liquids may be discharged direct to the sewer.

Spencer also picks up hot materials, reclaims metals and of course will clean large industrial areas and your offices in a remarkably short time. Bulletin on request.

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT

SPENCER HARTFORD

466-P

If you write maker identify as IEN - 6563

"This machine doubled our output!"
Folding Chair Manufacturer

Bostitch Foot-operated Stapler

A high arm stapler that adapts readily to a wide variety of stapling jobs. Shown here fastening plastic upholstery to chair seat. Also used for carding, assembling wooden toys, fastening wooden drawers, sealing packages of parts. Staples can be formed into a number of shapes. Low model available for seated operator. Easily motorized. Write for complete information on foot and motor operated stapling machines. Bostitch, 646 Mechanic Street, Westerly, R. I.

FASTEN IT BETTER AND FASTER WITH BOSTITCH STAPLERS AND STAPLES

If you write maker identify as IEN - 6564

"AMF De Walt saves us 80% on maintenance time and labor!"

says Marty Kule, Lezius-Hiles Printing Company, Cleveland, Ohio

"A typical job AMF De Walt® did for us was cutting and drilling lumber for 20 stock trucks. All the 1¼" pieces of lumber for one truck were cut and drilled in 1½ hours. Without AMF De Walt, the job used to take 8 hours. What's more, each came out accurate, alike, and required no finishing. The savings on this job alone half paid for our AMF De Walt!"

Versatile, economical, does all jobs. Fast, safe, accurate, compact. Prices start at $229 for ½ H.P. model. Send for catalog to De Walt Inc., Dept. IEN-54-6, Lancaster, Pa.

De Walt Inc. Lancaster, Pa.

DE WALT POWER SAWS

In Canada: De Walt Canada Ltd., Guelph, Ontario

Subsidiary of AMERICAN MACHINE & FOUNDRY COMPANY, New York

If you write maker identify as IEN - 6565

HEAVY-DUTY Foot Switch

Available with or without pedal guard, in several types

STREAMLINED to match modern machine styling • Heavy cast case, gasketed for oil-tight applications • Compact design—hugs floor—won't tip • Wide pedal, operable from three directions but protected against accidental contact or falling objects • Adjustable stroke. Short motion and slight angle eliminate ankle fatigue • Self-contained contact mechanisms easily wired or replaced • Snap action contacts, rated 600 volts pilot duty, A.C. or D.C.

Write for Bulletin 9002 AW. Square D Company, 4041 North Richards Street, Milwaukee 12, Wisconsin.

Ask Your Electrical Distributor for Square D Products

SQUARE D COMPANY

If you write maker identify as IEN - 6566

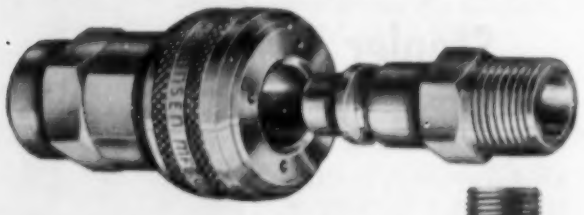
HANSEN

QUICK-CONNECTIVE

PUSH-TITE COUPLING

TRADE MARK

Provides Instant Automatic Flow or Shut-Off



To connect a Hansen Push-Tite Coupling, you merely push the Plug into the Socket with one hand. Flow is instantaneous.

To disconnect, push back sleeve on Socket . . . Coupling disconnects and flow is shut off instantly and automatically. No tools required. When Coupling is connected, Plug is free-swiveling, thus eliminating any possibility of kinks in hose.

Two-way shut-off and straight-through Couplings also available.
WRITE FOR CATALOG

THE HANSEN MANUFACTURING COMPANY
4011 WEST 150th STREET • CLEVELAND 11, OHIO

If you write maker identify as IEN - 6567

This torque tool leads a DOUBLE LIFE

FIRST it's a torque screw driver

THEN it's a torque wrench!

This scientifically accurate Apco torque tool does double duty. You can use it for driving screws where tension must be measured accurately. Then, remove the bit . . . substitute a socket, and presto — it becomes a vertical torque wrench that can be used to tighten nuts up to 100 inch pounds. Available in 13 size ranges — in inch grams; inch ounces; and inch pounds.

Here's your chance to save money . . . with two tools in one! This minutely accurate torque tool is made with the same care that characterizes all Apco Mossberg Torque Tools. Send for complete facts. Apco Mossberg Company, 171 Lamb Street, Attleboro, Mass.

APCO MOSSBERG COMPANY
ATTLEBORO, MASS.

If you write maker identify as IEN - 6568

GAGE . . Magnetic instrument measures coatings on ferrous metals

Source: FERRO CORPORATION
4150 E. 56th St., Dept. IEN, Cleveland 5, Ohio

Made in England

Elcometer trade names a new magnetic instrument that employs a permanent magnet mechanism enclosed in an aluminum die cast housing equipped with chromium plated contact spheres. The spheres are brought into contact with a ferrous metal base that has been finished with a non-magnetic protective or decorative coating. As soon as contact is made, a pointer moves over the instrument scale to read the coating thickness direct.

The instrument will measure films such as porcelain enamel, platings, paints, foils, plastic sheetings, leathers, glass, paper, rubber, lacquers, tinning. A locking device permits holding the reading so the instrument can be applied where it cannot be seen and then brought out for reading. List price is $55 in standard design.

If you write maker identify as IEN - 6569

PROTECTING . . Safety cap made of Duralumin, weighs 9 ounces

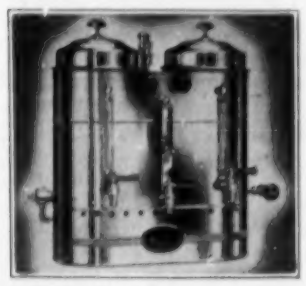
Source: B. F. McDONALD COMPANY
5721 W. 96th St., Dept. IEN, Los Angeles 45, Calif.

Workers like it

Safe-T-Cap is a new modification of the company's McDonald T-Hat. Elimination of the full hat brim permits objects to be carried on a worker's shoulders without interference. The cap crown is radial ribbed construction to deflect falling objects rather than to absorb the force of a blow. Contact with the wearer's head is by means of a soft leather headband. It is adjustable and permits cooling air circulation.

If you write maker identify as IEN - 6570

Both tea and coffee are prepared and dispensed by this new double urn. It is available from S. Blickman, Inc., 534 Gregory Ave., Dept. IEN, Weehawken, N. J. Tri-Saver is the designation. Tea is placed in a filter and boiling water is poured or syphoned over it. The brew filters into a liner below and is dispensed through a draw-off faucet. Large amounts can be drawn off into pitchers or other containers to make iced tea. The filter will not clog and is easily cleaned. The urn is available in capacities of 3 to 6 gal. on each of the two sides.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6571

WANTED!

. . . A CHALLENGE TO SOLVE YOUR FRICTION PROBLEMS

Aetna engineers and metallurgists are working constantly with equipment builders to improve their products. They specialize in hard-to-solve friction problems and hard-to-make ball and roller bearings and precision parts. Why not challenge them to solve YOUR next friction problem? Engineering analysis, recommendations and quotations without obligation.

AETNA BALL AND ROLLER BEARING COMPANY
DIVISION OF PARKERSBURG-AETNA CORPORATION
4600 Schubert Avenue
Chicago 39, Illinois

Aetna

Standard and Special Ball Thrust Bearings • Angular Contact Ball Bearings • Special Roller Bearings • Ball Retainers • Hardened and Ground Washers • Sleeves • Bushings • Miscellaneous Precision Parts

If you write maker identify as IEN - 6572

FABRICS & TAPES For ALL INDUSTRY

FLIGHTEX
FLIGHTEX FABRIC
FABRICS

- GLASS
- COTTON
- VINYON
- DYNEL
- ORLON

If you use special industrial fabrics and mechanical tapes, you'll find Flightex a dependable source of supply. Our staff of engineers is at your service to help solve your fabric and tape problems.

Write for Complete Information

FLIGHTEX FABRICS, Inc.
91 Worth Street New York 13, N. Y.

If you write maker identify as IEN - 6573

au´to.ma´tion, *n.* Mechanized, automatic handling of materials and parts-in-process, using custom designed production and conveying equipment to match the speed of modern automatic processing machines.

EXAMPLE: Tilt Stand fabricated for American Hard Rubber Co. to handle heavy reels of rubber and aluminum strip resulted in improved production efficiency and eliminated hazardous manual handling.

If you are considering automation—check with Associated Metal Fabricators. We have shared in the design and fabrication of automation equipment for many leading companies. Our engineering assistance is yours for the asking.

NEW "Custom Fabricating for Industry" describing AMF's production and engineering skill for Special Machinery • Industrial Tanks and Ovens • Automation Production Aids. Write for your copy.

MAF 1937 ASSOCIATED METAL FABRICATORS
Division of Jersey Sheet Metal Products, Inc.
78 SERAGO ST. • CLIFTON, N. J. • GREGORY 3-7474

If you write maker identify as IEN - 6574

CAPACITY + PRECISION + ECONOMY +

Model 55 Vertical Mill

Choose INDEX MILLS FOR THESE (+) PLUS ADVANTAGES

You get more when you buy an Index Mill—more quality, superior features. You are not just buying a machine . . . You are investing in equipment that will deliver better results at lower cost. The ideal machines for all your

MILLING, BORING and DRILLING JOBS

Outstanding in this great line is this versatile MODEL 55 VERTICAL MILL, designed for those extra capacity jobs often found in tool and die shops; provides increased speed and feed range. Capacity ⅛" to 1½" end mills in steel, a table working surface of 32" x 9" or 38" x 9"; overall 40" x 9" or 46" x 9"

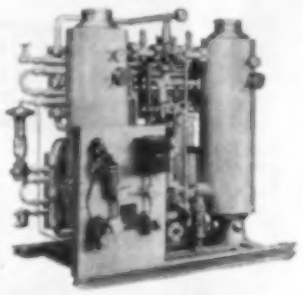
INDEX BUILDS BETTER MILLS . . . WRITE FOR LITERATURE

INDEX MACHINE Co.
545 N. MECHANIC STREET JACKSON, MICHIGAN

If you write maker identify as IEN - 6575

ELIMINATE MOISTURE PROBLEMS

with this Packaged Dehydration Unit



Pritchard HYDRYERS* have wide acceptance among critical buyers as the dependable quality unit for efficient drying of air or other gases in industrial, processing and laboratory installations.

Having pioneered the development of an efficient packaged dryer, Pritchard has the experience which assures you that a HYDRYER will meet your most exacting performance requirements. Standard packaged units reduce dew points to minus (-) 40° F. Custom-designed units can be furnished to meet extreme conditions or special requirements. For complete information, write for Pritchard's new HYDRYER bulletin 16.0.081.

**Registered Trade Name*

Industry's Partner for Progress

COOLING TOWERS
SPECIALIZED HEAT EXCHANGERS
GAS & AIR TREATING EQUIPMENT

J.F. Pritchard Co.
OF CALIFORNIA
A DIVISION OF J. F. PRITCHARD & CO.
Dept. 369, 210 West 10th Street
Kansas City 5, Mo.

Representatives in Principal Cities From Coast to Coast

If you write maker identify as IEN - 6576

NEW WESTINGHOUSE

FRONT END LOADER

HAS 74 inch TURNING RADIUS

● Here's a real timesaver where you have to move bulk materials in and out of boxcars, whip around sharp corners or move about in tight quarters. It is Westinghouse Air Brake Company's new ½-⅝ yard Front End Loader, which can help reduce the cost of handling bulk materials in chemical, cement, and fertilizer plants, in foundries and breweries. It has a short 46" wheelbase that makes it easy to maneuver.

A new planetary-reversing clutch-type transmission, integrally mounted on the driving axle, reduces normal reversing time about 95%. All controls are on either side of the steering wheel—the operator can load, lift, dump, or shift with just a short movement of his hand. A higher than normal bucket travel gives the operator a good view in front; whether he has the bucket raised or lowered, he can always see what he is doing and where he is going. All these advantages help to speed materials-handling operations.

Write for a free copy of our new brochure, which contains complete dimensions and specifications for this Westinghouse TL-50 Front End Loader.

Westinghouse Air Brake COMPANY

INDUSTRIAL PRODUCTS DIVISION WILMERDING, PENNA.

Manufacturers of air compressors, pneumatic cylinders, actuators, air control devices, engineered pneumatic control systems and front end loaders.

Factory Branch: Emeryville, Calif.
Distributors throughout the United States . . . see your Classified Directory.
Distributed in Canada by: Canadian Westinghouse Co., Ltd., Hamilton, Ontario

If you write maker identify as IEN - 6578

CONVEYING . . Oil proof belt for light service, width to 48 inches

Source: B. F. GOODRICH COMPANY
450 S. Main St., Dept. IEN, Akron 11, Ohio

Bulletin 2640

Koroseal white in single ply, tan in multi-ply, Highseal green and Kleenseal green are new conveyor belts employing the company's synthetic rubber Koroseal and special fabric. The new belt is resistant to attack by animal, mineral and vegetable oils and greases, by certain organic and inorganic acids, alkaline or neutral salts. It presents a smooth surface, non-porous in character, that resists flaking or checking and eliminates the danger of contaminating materials being handled. At the same time the Koroseal is resistant to abrasion and cutting. It is shown in a typical application carrying partly formed sharp edged oil bathed steel pulleys up an incline from a press operation.

Koroseal white is made in a single ply of light enameling duck with a smooth coat on one side. It is available in widths to 52 in. with unstitched edges and to 50 in. when the edges are stitched. Koroseal tan is recommended to handle nuts, meats, greasy pans of cookies, bread, where belt temperatures range from 50 to 150 degrees. It is in 2 or 3-ply construction and is made of the Koroseal material with smooth non-porous 1/32-in. cover and a friction surface back. It can be vulcanized endless or joined with fasteners. Widths are to 48 inches.

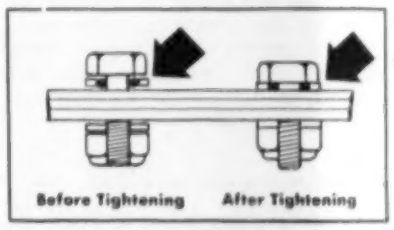
Highseal is recommended for food handling installations and for inspection line service with temperatures to 212 degrees. It is made 2, 3 and 4-ply, in any width to 48 in., with standard cover thickness at 3/32 inch. It has a top cover and a friction surface back or friction surface on both sides.

Kleenseal is recommended for handling products such as fruits, vegetables and in canning and bottling operations, as well as in inspection line service. It is in 2, 3 and 4-ply construction with surfaces the same as Highseal. Both of these belts are green in color to provide a restful background, particularly when used for inspection. Kleenseal is made to 48 in. width and to 300-ft. length.

If you write maker identify as IEN - 6579

SEALING . . Washer and O-ring to prevent leakage under a bolt head

Source: RUBBER TECK INC.
19115 S. Hamilton St., Dept. IEN, Gardena, Calif.



Pressure flattens ring

Duo-Seal is a new combination of steel washer with an O-ring bonded in place. Application is made on a bolt shank beneath the head, to seal against leakage when the bolt is drawn up tight. Sizes range from 3/8 to 5/8 in. in nominal bolt diameter. Various types are color coded according to use, for contact with fuels, high temperature, oil.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6580

Have you considered this AID for AUTOMATION ?

CYCLO-MONITORS:

1. **PRE-SET** over a wide range of numbers. No tools required.
2. **COUNT** shaft revolutions, lever strokes or electric impulses.
3. **TRANSFER** a built-in single pole, double throw control switch.
4. **HOLD** switch in transferred position for a controlled interval.
5. **RETURN** switch to normal position.
6. **REPEAT** automatically—with absolutely no interruption of the counting process. No lost counts or time lag.

CYCLO-MONITORS are available in many forms—including models arranged for your special requirements.

Write for Bulletin 202-1

COUNTER & CONTROL CORPORATION
5231 W. ELECTRIC AVE. • MILWAUKEE 14, WIS.

If you write maker identify as IEN - 6581

HOW TO GET THE RIGHT CLUTCH

Whatever your power transmission control requirements may be, your product will benefit by using a clutch that is exactly suited to its need. Thousands of manufacturers — in hundreds of industries — have increased the efficiency of their machines with the right ROCKFORD CLUTCHES. Our engineers are not restricted to any one type or size of clutch — but are free to specify one that is best suited to the particular operating essentials of your product.

Write for our latest bulletin that shows typical installations of ROCKFORD CLUTCHES and POWER TAKE-OFFS, with diagrams of actual applications, capacity tables, dimensions and specifications.

ROCKFORD CLUTCH DIVISION
BORG-WARNER
302 Catherine Street, Rockford, Illinois

ROCKFORD CLUTCHES

If you write maker identify as IEN - 6582

A 1001 products from pen points to fine fabrics, dies, casts and molds to intricate surface detail quickly inspected with the

'MICROCARD READER'

Here's the new, economical method of "pin point" accuracy in inspection of small parts and products. Control your quality by instantly magnifying the smallest part 23 times for accurate, detailed inspection. The Microcard READER is the low cost way to higher quality for you. WRITE TODAY FOR COMPLETE INFORMATION ON "INSPECTION APPLICATIONS" IN YOUR INDUSTRY.

THE MICROCARD CORP.
READER DIVISION
Box 314D
LA CROSSE, WIS.

If you write maker identify as IEN - 6583

TWIN DISC CLUTCH COMPANY Racine, Wisconsin
BRANCHES: CLEVELAND • DALLAS • DETROIT • LOS ANGELES • NEWARK • NEW ORLEANS • SEATTLE • TOLEDO

If you write maker identify as IEN - 6584

✓SAVE UP TO 40% SPACE!

✓EXTRA HIGH SAFETY FACTOR!

✓DEPENDABILITY . . . backed by 38 Years of Know-How!

NEW T-J

Spacemaker AIR CYLINDERS

Streamlined design of the new T-J Spacemaker *eliminates tie rods . . . saves up to 40% in mounting space!* It's performance-proved . . . *super rugged* with extra high safety factor . . . solid steel heads . . . heavy wall, precision honed, *hard chrome plated,* seamless steel body . . . leak*proof* cylinder head to body construction . . . heavy duty, hi-tensile, *hard chrome plated* piston rod.

Available with the new T-J Super Cushion Flexible Seals which insure positive cushion with automatic valve action for fast return stroke. Many standard sizes and styles . . . for pushing, pulling, lifting, clamping or control jobs. T-J dependability. Write for bulletin 454. The Tomkins-Johnson Co., Jackson, Mich.

T-J TOMKINS-JOHNSON

If you write maker identify as IEN - 6585

NOW... get new, reinforced

NU-TEX DEPRESSED CENTER DISK WHEELS

FOR FASTER, SMOOTHER CUTTING, roughing and grinding. Special, built-in resiliency provides smooth, cushioned cutting action . . . reduces bouncing . . . holds wheel in close contact with work. Cushioned action distributes pressure evenly . . . makes every inch of surface travel an inch of productive cutting . . . speeds up work with either portable or bench-type grinders.

FOR LONGER LIFE . . . LESS DOWNTIME. Bonded together with an extremely tough resin for added durability. Textile reinforcement provides maximum on-the-job safety . . . extra protection against breakage . . . longer life under continuous operation.

FOR A WIDE SELECTION . . . PROMPT SERVICE. Nu-Tex Depressed Center and Straight Disk Wheels are now available in popular diameters and thicknesses for all types of finishing. Grades range from 0 (hard) to 6 (soft). Write for complete details. Atlantic Abrasive Corp. 502 Pearl Street, South Braintree 85, Mass.

ATLANTIC ABRASIVE CORP.
South Braintree 85, Massachusetts

If you write maker identify as IEN - 6586

FOR MAXIMUM VERSATILITY IN SURFACE FINISHING YOUR PRODUCT— FROM ROUGH GLAZE TO MIRROR FINISH!

Specify the
CLAIR Model 202

SURFACE FINISHING MACHINE

Designed for surface finishing flat or contoured products, this double-roll machine provides automatic float of buffs at any predetermined pressure. Hydraulic "in" and "out" stroke is adjustable from 0" to 24", and automatic spray equipment is available.

Write for Bulletin 202

CLAIR MANUFACTURING CO., INC.
Specialized Machine Equipment For Glazing and Polishing Operations
OLEAN, N. Y.

If you write maker identify as IEN - 6587

TRUCK . . Motor driven carrier to transport personnel and materials

Source: VICTOR ADDING MACHINE CO.
3900 N. Rockwell St., Dept. IEN, Chicago 18, Ill.

Turning radius 7 feet

Illustrated is the Lugger, one of several new designs in the company's Electri-Car line of battery powered motor driven equipment. It has capacity for a ½-ton payload and two passengers. It provides four speeds both forward and reverse. It weighs about 1,100 lb. and lists at $1,225. Top speed is about 5 miles per hour.

The Scooter, another unit in the line, rates a ¼-ton payload and two passengers. The Pic-A-Bac is a personnel carrier for four individuals. The Scooter lists at $963 and the Pic-A-Bac at $1,007. All are equipped with four 165 amp. hr. batteries and are provided with battery chargers and testers.

All models are 38 in. in width. The Scooter and Lugger are 95 in. in length. Height at the back support of the seat is about 42 inches. A fourth model, known as the Courier, is a single-seat design for mailroom deliveries and for use by foremen and superintendents.

If you write maker identify as IEN - 6588

GRINDING . . Surface machine designed for gage and form tool work

Source: COVEL MFG. COMPANY
280 N. Shore Drive, Dept. IEN, Benton Harbor, Mich.

Bulletin 10-54

Work measuring 6 in. in width by 18 in. in length by 15 in. in height can be handled on this new machine under a 7-in. grinding wheel. The table has 20 in. of longitudinal travel, 7 in. in transverse direction. The grinding wheel is vertically adjustable through 15 inches.

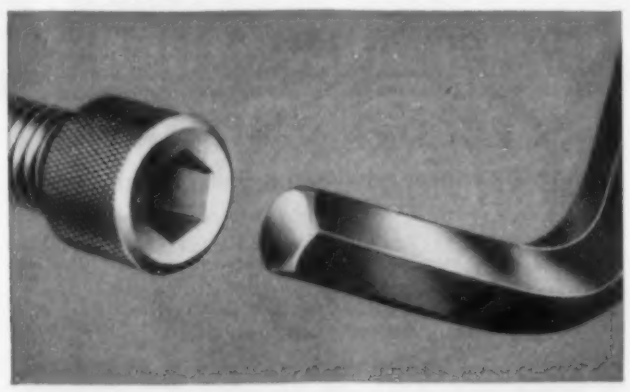
The table can be equipped with hand or mechanical feed. Its speed is 15 to 50 fpm. with a ⅓-hp. 1,200 rpm. reversing motor in connection with variable pitch sheaves. The elevating and transverse movements can be equipped with indicator gages for use with gage blocks or measuring rods. A wet attachment, magnetic chuck, dust collector and Bijur lubricating equipment can be specified.

If you write maker identify as IEN - 6589

Grade Z-2 is a new alloy steel powder made by Keystone Carbon Co., Dept. IEN, St. Marys, Pa. Parts made from it, and then heat treated, have ultimate tensile strength to 115,000 lb. per sq. in. and hardness at 30 on the Rockwell C scale. It is now possible to fabricate powdered metal parts such as gears, cams, rollers, for heavy duty service that will compare favorably with parts machined from wrought steel.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6590



Bristol's hex socket screws assure quick, strong assembly

• Easier to apply in hard-to-get-at places, Bristol's hex socket cap screws spin readily into place, fit perfectly and wrench up tightly. Stronger holding, tamper-proof, they make production and maintenance easier. Get them from your industrial distributor. Sizes 0 wire to 1" in diameter. Write for free bulletins showing applications.

BRISTOL'S SOCKET SCREWS
Hex and Multiple-Spline Socket Screws, Cap and Set

THE BRISTOL COMPANY, Socket Screw Division, Waterbury 20, Conn.

If you write maker identify as IEN - 6591

HARDINGE
ELMIRA, N.Y.

COLLETS and FEED FINGERS

PERFORMANCE . . . ECONOMY

Collets and Feed Fingers for all makes of Automatics, Chucking Machines and Turret Lathes through a **single** source of supply. Get the benefit of more than 60 years of manufacturing experience—specify HARDINGE Collets and Feed Fingers.

HARDINGE BROTHERS, INC., ELMIRA, N. Y.

If you write maker identify as IEN - 6592

BULKY, AWKWARD, HEAVY LOADS

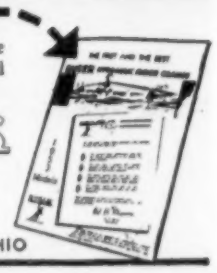
Handled
• EASILY
• SAFELY
• QUICKLY
for LESS

2 TON CAPACITY

SUBSTITUTE FOR AN ELEPHANT®

GET THIS BOOK

Gives all the facts about Ruger's complete line of hydraulic floor and truck mounted cranes, capacities 1000 to 6000 lbs.

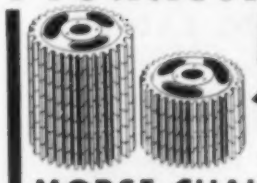


RUGER CRANES

613 West Fourth St. UHRICHSVILLE, OHIO

If you write maker identify as IEN - 6593

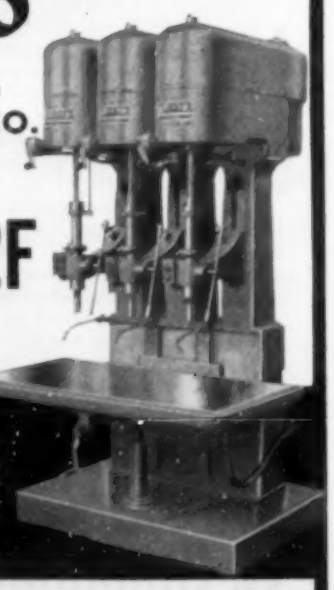
Production Increased 53%



when
MORSE CHAIN CO.
Borg-Warner Industry
Installed the

EDLUND 2F

Variable Speed
Drilling and Tapping machines



Results: Production drilling of sprockets increased from 85 pieces per hour to 130 pieces per hour when the EDLUND 2F Variable Speed Drilling machine was installed by Morse Chain Co.

Edlund 2F *Variable-Speed* — the greatest advance in drilling and tapping machines in the past 25 years — has solved many drilling problems and could be the answer to your drilling requirements.

Dealer representation in major cities.
Write for Bulletin #140.

EDLUND Machinery Co. Cortland, N. Y.
Affiliated with Precision Castings Co., Inc., Division Bradley Edlund Corp

If you write maker identify as IEN - 6594

NEW SUBMERSIBLE SUMP PUMP

12½" high
10" dia.
40 lbs.

MODEL 54, bronze fitted, for portable or stationary service—continuous or intermittent duty. ⅓ h. p. motor, G. E. components, has built-in overload protection—sealed motor and switch parts—permanently lubricated bearings. Actuated by reliable automatic heavy-duty controls—no diaphrams. Can be operated manually. Positive priming at all times. Many other features. Wide application.

Added to regular

PENBERTHY line

3 models, 7 sizes of automatic electric sump pumps by the oldest and largest producer. Equipped with automatic, trouble-free features. Known for dependability. Write for complete details.

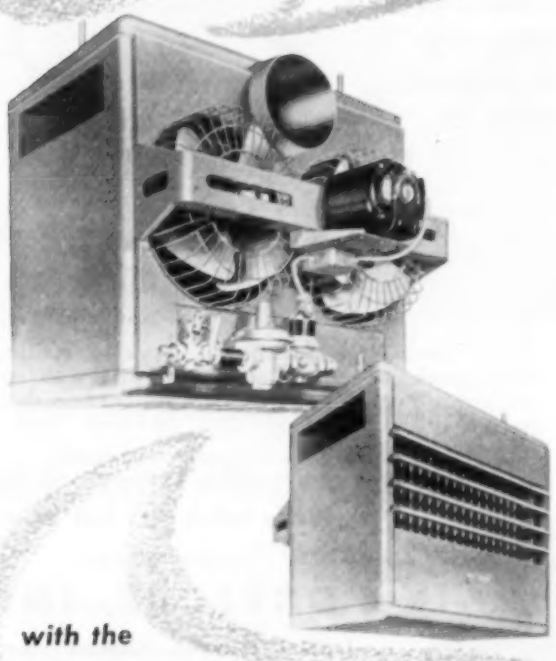
PENBERTHY INJECTOR COMPANY
Division of the Buffalo-Eclipse Corporation
1242 Holden Avenue, Detroit 2, Michigan
Established 1886

There's Certain satisfaction in **PRODUCTS BY** PENBERTHY

- EJECTORS
- EDUCTORS
- EXHAUSTERS
- SYPHONS
- JET PUMPS
- INJECTORS

If you write maker identify as IEN - 6595

NEW Reznor's 250,000 BTU Gas Unit Heater



with the

Exclusive Twin-Fan Design

Now there's more proof of Reznor engineering leadership—a new 250,000 BTU twin-fan heater. The first of its size to be offered by any nationally-recognized unit heater manufacturer. The first of any size to feature twin-fan design.

The two fans, operating from a single heavy-duty ¼ HP motor, provide more effective air distribution at a much lower noise level than is possible with a single larger fan. The new unit moves 3200 CFM with an air throw of 90 feet.

Tremendous capacity and power—but still so compact you can fit it into almost any out-of-the-way spot. Height of the US250-F is only 33½", the same as on Reznor's 175,000 BTU unit. The new 250,000 BTU heater is 36" wide and 40 3/16" deep overall; cabinet depth is 24⅝".

For more details on this revolutionary new unit, write today for your copy of spec sheet NPS-5401A. For the whole story on the complete Reznor line see the Reznor catalog in Sweet's Plant Engineering and Industrial Construction Files.

The Reznor Manufacturing Company
10 Union Street, Mercer, Pennsylvania

REZNOR
THE WORLD'S LARGEST-SELLING GAS UNIT **HEATERS**

If you write maker identify as IEN - 6597

SCREW DRIVING . . Hand tool with spring slider to grip screw head

Source: STANLEY TOOLS
480 Myrtle St., Dept. IEN, New Britain, Conn.

For places hard to get at

Hexagon steel blade, plastic handle, and a slider equipped with screw holding spring fingers make up the assembly of this new Spee-D-Grip screw driver. The tool is available in 2 to 10-in. blade lengths with a straight edge blade and hexagon shank. Included are six tools with a shank measuring 5/32 in., three measuring 7/32 in. and two with cross points to fit recessed head screws measuring 5/32 and 7/32 inch. Overall length is 4¼ to 13¼ inches. Weight is ⅜ to 1 pound. List price is 50 cents to 90 cents.

If you write maker identify as IEN - 6598

LAYOUT . . Granite surface plates, angle plates, straight edges, parallels

Source: JONES BROTHERS COMPANY
Dept. IEN, Barre, Vt.

Data bulletin upon request

The company announces availability of a new line of layout equipment made of granite with accuracy to 0.00005 inch. The line includes surface plates ranging from 12 by 12 by 3 in. to 72 by 96 by 16 in., angle plates measuring 4 by 4 by 4 in. to 12 by 12 by 8 in., straight edges measuring 18 by 3 in. to 96 by 16 in. in length and depth, and parallels measuring 1 by 2 by 8 in. to 1½ by 3 by 15 inches.

The granite is uniform in hardness, resistant to abrasion and stable over a considerable temperature range. It also is shock resistant. Gage blocks will not stick to its finished surface, although they can be wrung to it. The granite contains no free iron or iron salts and so is non-magnetic. It is impervious to oxidation. It can be cleaned with gasoline or commercial solvents.

If you write maker identify as IEN - 6599

FILTERING . . Tubular assembly, stainless steel for plating solutions

Source: STEADFAST INDUSTRIES INC.
4731 W. Madison St., Dept. IEN, Chicago 44, Ill.

Elements lift out

Filter tubes made of porous stainless steel are assembled in a head that lowers into the tank of this new filter. It is designed to clean plating solutions, either acid or alkaline. The filter elements are permanent and can be kept in operating condition by backwashing. Sizes range in capacity from 1,500 to 3,600 gph. with overall height in all sizes at about 42 inches. Mounting is on casters for portable application.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6600

TAKES THE BREAKS OUT OF VIBRATING LINES

PENFLEXWELD
Corrugated . . . Flexible . . . Seamless Tubing

HERE'S A JOB just "made" for Penflexweld: the steam lines of a paper laminating machine. Steam pressure —100 psi . . . machine movement—¼" constantly . . . vibration—terrific. The Penflex Engineer recommended braided Penflexweld Tubing with Metseal couplings.

Penflexweld, the corrugated, all-metal welded tubing is flexible . . . resists bursting, crushing, breaking . . . is heat and flame-resistant . . . is "keep proof" . . . absorbs vibration. Have you a job for it?

Send today for the new illustrated data book on "Flexineering."

Pennsylvania Flexible Metallic Tubing Co., Inc.
7200 Powers Lane, Phila. 42, Pa.

PENFLEX
HEART OF INDUSTRY'S LIFE LINES

If you write maker identify as IEN - 6601

FOR PRECISION Carbide Finishing

ELGIN DIAMOND IN DYMO-C

...Designed for Carbides!

Where precision really counts, finishers specify ELGIN Diamond because they can be sure of:

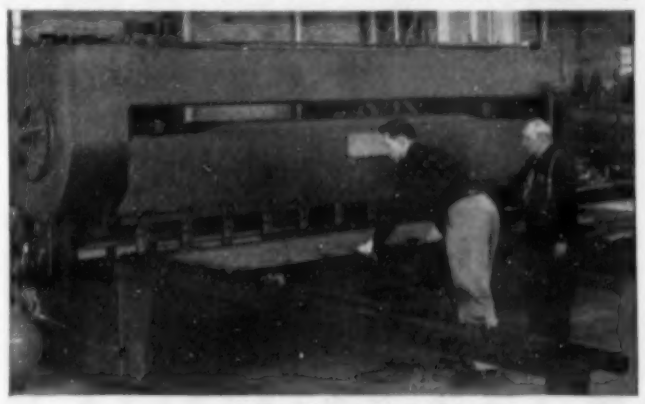
- *consistant accuracy—uniform cutting action*
- *flawless finishes every time, in less time*

Actual field tests prove this new diamond abrasive up to 20% faster for finishing carbides.

Send for the DYMO-C bulletin today!

ABRASIVES DIVISION, Dept. H
ELGIN NATIONAL WATCH COMPANY
ELGIN, ILLINOIS

If you write maker identify as IEN - 6602



. . . NEVER SEEN A SMOOTHER OPERATING SHEAR

The Enos & Sanderson Company, a leading steel warehouse in Buffalo, writes concerning their ¼" x 12' Steelweld Shear:

"We are extremely satisfied with the operation of this unit and would recommend this machine highly to anyone. A rigger, who set up this shear for operation, remarked that, in his twenty-five years of work with shears of all types, he had never seen a smoother operating shear in his experience."

STEELWELD Pivoted-Blade SHEARS CATALOG No. 2011

Send for free copy of catalog No. 2011.

THE CLEVELAND CRANE & ENGINEERING CO.
4241 E. 282nd St., Wickliffe, O.

STEELWELD SHEARS

If you write maker identify as IEN - 6603

Laminates for high strength-to-weight

• Strength and light weight are two advantages of *Synthane* laminated plastics. Because of these properties *Synthane* is widely used in aircraft construction, ball bearing retainers, and many similar applications. *Synthane* also has high dielectric strength, chemical resistance, and dimensional stability.

Synthane is supplied in sheets, rods, tubes, special shapes and fabricated parts and in a wide choice of grades to meet design requirements. The coupon will bring you full information.

SYNTHANE

SYNTHANE CORPORATION
SOUTH RIVER ROAD, OAKS, PENNA.

Manufacturers of laminated plastics
Please send me more information about Synthane.

Name _____
Company _____
Address _____
City _____ (zone) _____ State _____

If you write maker identify as IEN - 6604

Can Veelos V-Belts CUT VIBRATION 20% to 90% in your machines?

Machine vibration is usually caused by one or more of these five factors: bearings; motor; clutch; sheaves; v-belts. Frequently, v-belts alone are the major cause of vibration.

Actual performance on many different types of machine tools has proved that Veelos v-belts can reduce vibration 20% to 90%.

Here's why this is so . . .

Every Veelos belt is *perfectly balanced* throughout its entire length. Every Veelos link and stud is *absolutely uniform*. The *smooth, machine cut sides* and the *laminated construction* of the belt assure full, vibrationless power delivery.

These facts can be readily demonstrated with an electronic analyser. This analyser measures amplitude of vibration to as low as 2-millionths of an inch. A few minutes is all that is required to show you that Veelos runs smoother and creates less vibration than regular v-belts.

Drop us a line for a demonstration with the electronic analyser.

VEELOS THE LINK V-BELT

MANNHEIM MANUFACTURING & BELTING CO.
651 Mauhei St., Mauheim, Pa.

Adjustable to Any Length • Adaptable to Any Drive

Veelos is known as Veelink outside the United States

If you write maker identify as IEN - 6605

Now! 20 TON WEIGHING CAPACITY IN A 35-LB. SCALE!

NEW Portable ELECTRONIC SCALE

WEIGHS LARGE LOADS ANYWHERE, FASTER and EASIER!

Operates on power circuits or batteries

Light enough to carry easily, yet strong enough to handle 20 ton loads . . . this "little giant" brings you new opportunities for time and cost savings in weighing operations. No installation needed—just place it, plug it in, and start weighing. There's nothing to get out of order—no tubes, no fragile parts. Scale is weather, temperature and shock-proof—with 10 ton overload capacity. Dial may be placed near the work or connected through cables for remote reading. Four or more portable platforms may be used with a single indicator.

The new Control Cells Electronic Scale or Weight Indicator takes electronic weighing out of the laboratory and makes it a completely new and versatile industrial tool. Send for complete literature. Engineered applications also available for built-in installations.

Control Cells

CONTROL CELLS CORPORATION
511 North Hillside
Wichita 6, Kansas

CONTROL CELLS CORPORATION
Research Department
511 North Hillside, Wichita 6, Kansas

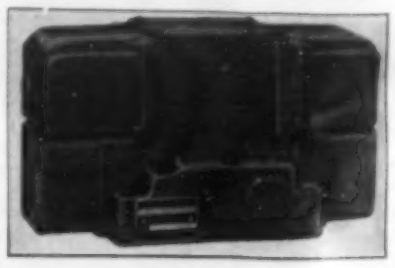
Please send me complete information about your new Electronic Scale.

Name .....
Position .....
Firm .....
Address .....

If you write maker identify as IEN - 6607

VALVE . . Four way hydraulic solenoid controlled, pilot operated

Source: DOUBLE A PRODUCTS CO.
Dept. IEN, Manchester, Mich.



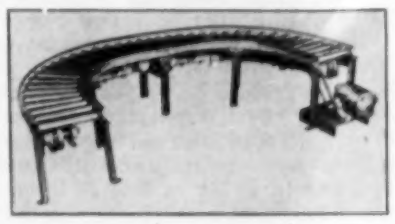
Details on request

Pipe sizes are ½ and ¾ in. for this new pilot operated valve. Volume rates to 20 gpm. with operating pressure to 2,000 pounds. Closing and opening of solenoid circuit moves the operating pilot from one position to another to apply pressure on pistons that form a part of the main valve assembly. This admits and exhausts pressure in the main lines. The valve is available in three basic models, all for sub-plate mounting. The design permits quick assembly and servicing.

If you write maker identify as IEN - 6608

CONVEYING . . Live roller curve reverses direction of a conveyor run

Source: ALVEY CONVEYOR MFG. CO.
9301 Olive St. Road, Dept. IEN, St. Louis 24, Mo.



Rollers ride belt

Geared head motor mounted at one end of this new 180-deg. live roller conveyor section is chain connected to a belt drive beneath the section that extends around to the opposite end. The curve can be installed in horizontal position in a conveyor line so no change in elevation is required to continue movement around the curve to an outlet. In addition to the 180-deg. assembly the company is prepared to supply power driven curve sections to make 30, 45 and 90 deg. turns in nominal conveyor widths over a range of sizes.

If you write maker identify as IEN - 6609

Mount this new Everett Trencher on a Ford or Ferguson tractor, connect it to the power take-off on the tractor, and you have the equivalent of pick-and-shovel work of 25 men. Chain mounted tooth equipped buckets ride the attachment in a closed circle. They dig and carry the dirt upward for delivery to a belt conveyor that moves it to the side for discharge or to load into a truck. The attachment cuts a trench to 42 in. in depth by 12 to 18 in. in width. A V-belt acts as a safety device to stop the bucket line if the buckets meet obstructions such as pipe lines, heavy roots, large rocks. Earth Equipment Corp., 2036 Sacramento St., Dept. IEN, Los Anegeles 21, Calif., is the maker.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6610

In 1950 American Welding completed the first successful production flash butt-welding of the new wonder metal —Titanium Alloy. Since that time hundreds of Titanium components have been produced in our plant.

If you use, or are planning to use, fabricated Titanium components, let our Product Development Division study your problem. Our factory is equipped to perform welding, machining, and fabricating of all types of ferrous and non-ferrous metals. Call or write us today!

THE AMERICAN WELDING & MANUFACTURING CO.
760 DIETZ ROAD • WARREN, OHIO

If you write maker identify as IEN - 6611

Tri-Lok provides you with the perfect open steel flooring for areas where grease, oil and other slippery conditions make walking dangerous.

By serrating both bearing and cross bars, a positive non-slip surface in every direction is assured . . . providing safe walking and eliminating an accident hazard.

Tri-Lok Serrated Grating contains all advantages of other *Tri-Lok* gratings *PLUS* the non-slip safety feature.

For more information write:

DRAVO CORPORATION
PITTSBURGH 22, PENNA.
National Distributor for THE TRI-LOK COMPANY

If you write maker identify as IEN - 6612

JACO Horizontal STOCK REEL

LOW COST — AUTOMATIC

No motors — No belts — No sprockets

POWERED BY THE NATURAL SPRING OF UNCOILING STOCK . . .

JACO Stock Reel operates automatically . . . without attention or maintenance . . . so simple there is nothing to get out of order.

The loop of stock between the Coil and the Press Feed completely eliminates slippage, kick-back and over-run.

JACO Stock Reels handle all types of resilient coiled stock for light stampings up to 250 lb. coil weight . . . up to 36" coil diameter . . . up to 6" stock width.

Proved in actual use by major manufacturers.
Guaranteed to work on your job or money back.

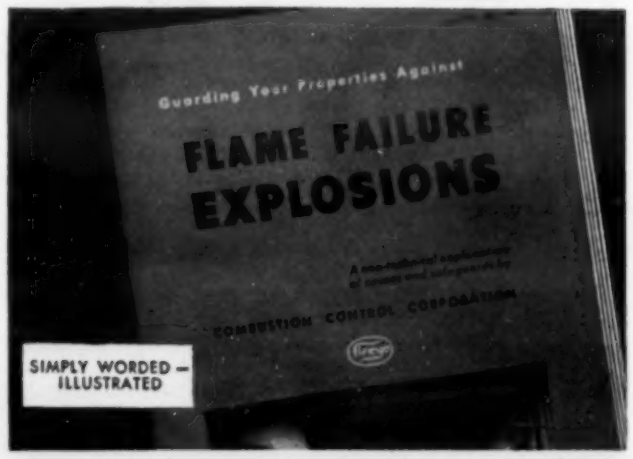
Write today for full details

Hingham 6-0873

JACO DEVICES, INC.
91 High Street, Hingham, Mass.

If you write maker identify as IEN - 6613

FREE! New Safety Information 4-out-of-5 Plants Need!



IF YOU BURN oil, gas, powdered coal or other fuel, for power, processing or heating, the chances are 4-out-of-5 that you do not have complete safeguards against burner flame-failure explosions.

Why take chances . . . ? This new booklet gives you all the information you need to prevent flame-failure explosions. With it you can spot burner explosion hazards in your plant — identify obsolete or inadequate "protective" devices — determine your needs for the most modern safeguard equipment. Get your copy, free! Please give your company name and title.

WRITE:

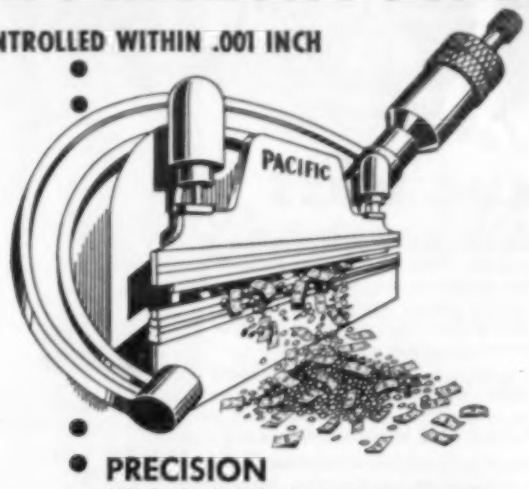
COMBUSTION CONTROL CORPORATION
Dept. C7-6, 718 Beacon Street
Boston 15, Mass.

fireye

If you write maker identify as IEN - 6614

TWO MILLION POUNDS

CONTROLLED WITHIN .001 INCH



PRECISION

1000 Ton Pacific Hydraulic Press Brakes repeatedly form bends within .001". The ram remains level within minutes of arc.

PRODUCTION

Pacific Hydraulic Press Brakes in operation today multiple punch heavy steel fence posts at the rate of 1000 per hour.

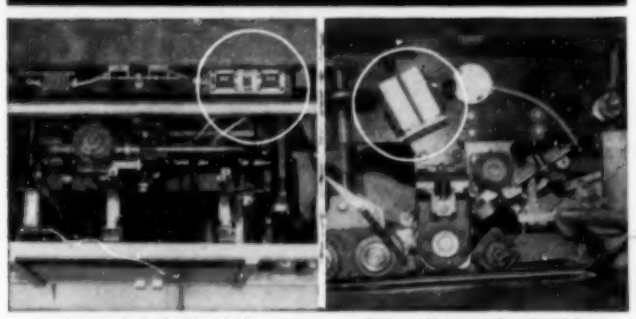
PROFITS

Precision + Production = Profits. Investigate today.

PACIFIC INDUSTRIAL MFG. CO.
848 - 49th Avenue - Oakland, Calif.

If you write maker identify as IEN - 6615

dependable NAMCO
"STELLITE"-WELD
Solenoids



Courtesy, F. L. Smithe Machine Co., Inc. — *Courtesy*, Universal Corrugated Box Mach. Corp.

do hard-to-get-at jobs like these *Automatically*

Whether you are synchronizing movement of the cutting board and ram on a hydraulic die press for making envelopes, or operating the taping mechanism on a pasteboard box making machine—Namco solenoids designed into the job insure better performance longer.

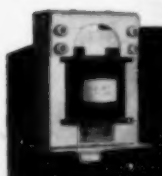
Solenoids offer you a modern, up-to-date way of doing jobs automatically, by remote control—even in cramped quarters.

Many manufacturers with a cost or space problem have found the solution in these compact reliable solenoids. They're using them in the place of expensive and bulky gear trains, levers, linkages and other mechanism. They're getting better products (usually at lower costs) by using *Namco* Solenoids to

OPERATE VALVES	MOVE LEVERS
ACTUATE CLUTCHES	PRINT SYMBOLS
OPERATE SWITCHES	OPERATE SAFETY DEVICES
CONTROL MACHINES	EJECT WORK IN PROCESS

Namco "Stellite"-weld Solenoids are built in sizes with ratings from 2½ to 25 pounds, push or pull, at maximum 1" stroke. We'll be glad to recommend the size and style best suited to your job—ask our engineers to talk it over with yours.

Engineering BULLETIN EM-52 gives details on standard Namco Solenoids.



ELECTRICAL MANUFACTURING DIVISION
The NATIONAL ACME COMPANY
170 EAST 131st STREET • CLEVELAND 8, OHIO

ACME-GRIDLEY BAR and CHUCKING AUTOMATICS
1-4-6 and 8 Spindle • Hydraulic Thread Rolling Machines • Automatic Threading Dies and Taps • Limit, Motor Starter and Control Station Switches • Solenoids • Contract Manufacturing

---

If you write maker identify as IEN - 6617

LATHE . . Power feed attachment for Rapiduction lathe turret carriage

Source: OSTER MFG. COMPANY
2057 E. 61st Place, Dept. IEN, Cleveland 3, Ohio

For new or old machines

Feed rate can be set at any point between 1.4 and 20 ipm. by turning a knob on the control housing of this new power feed attachment. The control and a gear connected motor drive for the carriage rack pinion mount on the side of the carriage of the company's No. 601 Rapiduction turret lathe, as shown in the illustration. Power is provided for the drive by a small transformer that mounts in the control compartment of the machine for 110-volt ac. to the combined rectifier and control which delivers variable voltage dc. to the 1/15-hp. drive motor.

A cone clutch, operated by a cam equipped lever on the end of the carriage rack pinion shaft, engages and disengages the power feed. It permits manual operation, by means of the capstan wheel, in disengaged position. A limit switch cuts out the power feed when the carriage is 1/6 in. away from a positive stop. It serves each of the six turret positions so the operator can make the final small movement manually to contact the stop. He then retracts the carriage to index the turret, brings the carriage forward to the work and re-engages the power feed.

If you write maker identify as IEN - 6618

METER . . Miniature dc. instruments, portable for laboratories, inspection

Source: WESTON ELECTRICAL INSTRUMENT CORP.
614 Frelinghuysen Ave., Dept. IEN, Newark 5, N. J.

Circular A-40-A

Model 281 designates a new series of portable dc. electric meters including voltmeters, millivoltmeters, ammeters, milliammeters, and volt-ammeters. The instrument employs the Cormag self-shielded mechanism that permits its use in close proximity to magnetic materials without affecting accuracy. Assembly is in a Bakelite housing which also insulates so the instrument will withstand a dielectric test of 2,600 volts between the housing and terminals.

The scale is hand calibrated and is equipped with a mirror and a knife edge pointer to eliminate parallax error. A zero corrector on the front of the housing permits adjustment to zero position. Overall dimensions are about 4½ by 4½ by 1½ inches. Weight is about 14 ounces. The company has prepared a circular listing the ranges and prices.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6619

Replace Your Hammers with Air Power!

Cut Cost . . . Speed Up Hammer and Tool Operations with the

BIG BULLY AIR HAMMER

This 6 inch, 50 ounce Big Bully has Superior's exclusive metering trigger which delivers 0 to 9000 blows per minute.

14 Tools Available for 100 Different Jobs

Each tool designed specifically for use with the Big Bully. Blanks available for use in making tools of your own design.

- Scaling Tool
- Routing Chisels
- Flat Chisel
- Peening Tool
- Finishing & Forming Tool
- Star Drills
- Oil Grooving Chisel
- Sheet Metal Cutter
- Panel Cutter
- Spoon Face Chisel
- Gouge
- Wood Chisel
- Wedge Driver
- Paint Scrapper

Write for further information to . . .

SUPERIOR Pneumatic & Manufacturing, Inc.
4758 WARNER ROAD • CLEVELAND 25, OHIO

If you write maker identify as IEN - 6620

Cyclone Belt takes over dangerous manual job . . . and speeds production

● In this mill the dangerous job of feeding the paper shredding machines was being done by hand. Serious accidents occurred. But now there is no chance of injury because a Cyclone Woven Wire Belt has taken over this risky operation . . . eliminating accidents and, at the same time, speeding production. Costs were cut in both ways.

You may have a dangerous, slow or awkward operation in your own plant that could be done more safely, more efficiently with the right Cyclone Conveyor Belt. Why not call on one of our experienced plant engineers for suggestions? No obligation. And write to Dept. C-64 for your free copy of our new, informative Catalog No. 5.

USS CYCLONE
METAL CONVEYOR BELTS

CYCLONE FENCE DEPARTMENT
AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL CORPORATION
WAUKEGAN, ILLINOIS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

UNITED STATES STEEL

If you write maker identify as IEN - 6621

3000 FINISHED WIRE LEADS per hour . . . automatically

- measured
- cut to length
- stripped one or both ends

with the

ARTOS CS-6 AUTOMATIC

FAST, FULLY AUTOMATIC production of finished wire leads can save you hundreds of dollars in time and labor. In the cutting and stripping of insulated wire, cord, cable, etc., up to No. 10 stranded or No. 12 solid, the ARTOS CS-6 gives you these advantages:

- *Uniform stripping and cutting lengths.*
- *Elimination of human error.*
- *Quick, easy set up.*
- *Reduction of work spoilage, no nicking of wire.*

WRITE FOR FREE BULLETIN. Get the complete story Ask for Bulletin 35-C.

Automatic Wire Cutting and Stripping
ARTOS ENGINEERING CO.
2749 S. 28th St. • Milwaukee 46, Wis.

If you write maker identify as IEN - 6622

UNIT 357 MOBILE CRANE

ALL models CONVERTIBLE to ALL attachments!

- SELF-PROPELLED
- RIDES ON RUBBER
- HAS 1001 USES

Faster material handling — less cost!

The "357" is a typical one-man UNIT crane . . . compact, powerful, works fast at low cost even in cramped space, inside your plant or out in yard . . . great for lifting, loading, unloading, material-handling of steel, pipes, bars, lumber, bulk materials and equipment . . . moving, erecting, dismantling machinery. Easy to operate . . . 360° swing . . . full-vision cab assures complete visibility, an aid to speed and safety. Catalog has complete data. Write for your copy.

UNIT CRANE & SHOVEL CORP.
6605 West Burnham Street • Milwaukee 14, Wisconsin, U. S. A.

UNIT
CRANES CLAMSHELLS MAGNETS

A 7851-1/9

If you write maker identify as IEN - 6623

Not much room for your THERMOSTAT?

The Wilcolator Series F "Space Saver" Electric Thermostat packs big dependable performance into remarkably small space. Into the space of 2 23/64" x 2 11/16" x 1 21/32", to be exact. Yet it offers various temperature ranges between 40°F and 550°F. The Series F is a snap action single pole, double break thermostat. It can be used with any standard dial or pointer having a 1/4" diameter shaft hole. Dimensions of the bulb and length of capillary tube can be varied to suit the application.

STANDARD TEMPERATURE RANGES:
40-100°F. 50-250°F. 60-90°F. 150-550°F.

CONTACT RATING:
22A. 230/115V.
1 h.p. 230V. 3/4 h.p. 115V.

Type F-1 Contacts Open on Temperature Rise. Type F-2 Contacts Close on Temperature Rise.

For full information write for Folder #359.

THE Wilcolator COMPANY
1001 NEWARK AVENUE, ELIZABETH, NEW JERSEY

If you write maker identify as IEN - 6624

NEWCO WIRE ROPE CLAMP WILL OUTLAST ANY KNOWN GRIP, CLIP OR THIMBLE!

- **Holding Efficiency 95% to 100% of Catalog List**
- **Easily, Quickly Installed**
- **Easily Adapted to Making Slings**

Users of Newco Clamps report two to three times longer life. Why? They're built stronger! Bearing surface is 5 to 10 times greater than pressed steel thimble. Patented locking construction automatically forces clamp to hold tighter when load gets heavier—with maximum protection to wire rope. Impossible to shear bolts off; rope pressure pushes keying sections together, prevents movement of bolts up and down. Users report greater holding efficiency than "U" bolt type clips. Assembly includes two sections, bolts, *no clips*. Simple as a-b-c to install with no special tools required.

HERE'S PROOF!

This Newco Clamp has been on the job steadily on a crane, using a magnet, for Schiller Park Compressed Steel Corp. for many months without any noticeable wear.

wire rope NEWCO CLAMP

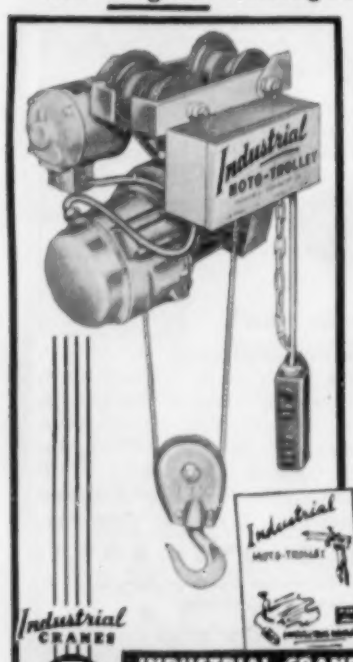
GET ALL THE FACTS! See your Distributor or write today for complete specifications, details and prices on the amazing Newco Clamp!

NEWMAN MANUFACTURING & SALES COMPANY
Dept. 101, 205 Westport Road, Kansas City 11, Mo.

If you write maker identify as IEN - 6625

Industrial MOTO-TROLLEY

The Original Packaged Motor Driven Trolley



MAY BE ATTACHED TO YOUR STANDARD ELECTRIC HOIST . . .

Adjustable to Accommodate Wide Variety of Beam Sizes

- Crown-tread machine steel wheels with hardened drivers.
- Each wheel equipped with double-row precision ball bearings and removable-head axle with Alemite grease fittings.
- Powered by a crane-duty high-torque totally enclosed motor of 30 minute 55 degree rating.
- Magnetic contact panel has transformer to reduce voltage in single speed push button control circuit.
- 4-button control station operates single speed trolley and hoist motions.

Write for Literature

Industrial CRANES

INDUSTRIAL CRANE & HOIST CORPORATION
(formerly Industrial Equipment Co.)
321 NORTH ADA STREET CHICAGO 7, ILLINOIS
Overhead Cranes • Jib Cranes • Monorail Systems
Crane Runways
Representatives in Principal Cities

For Your Special Information

ALL MAKERS ARE LISTED IEN S-12

A house publication printed an article concerning purchase of materials for one of our major railroads. The article opened with a question. Here it is—

"Suppose you had to purchase some 80,000 different items each year with approximately $30 million. . . . And suppose these items ranged from huge locomotives right down to rail joints, frogs, lag screws, paper clips. Where would you start?"

The answer to that one is simple. The one very best place to start is with a set of the copies of Thomas' Register. There you will find the names of the manufacturers, all of them, of all makes and types of locomotive, including the firms that rebuild the old ones. There also will be all of the makers of all of the 80,000 different items, plus a good many more in case you are interested beyond the needs of a big railroad.

An excellent procedure is to start with the Register and check off the names of the most likely suppliers. Then look through your literature files, if you have any, to pick out the current material. Save a lot of future work, while you are at this part of the job, by throwing out all the old bulletins and catalogs. Products change so rapidly these days that a bulletin six months old is near to being ancient history. Address the manufacturers whose products you want to consider and ask for the latest information or a salesman, or both, and you are on the way to comparatively easy completion of the biggest source finding job that anyone can think up.

For $15, plus handling charges, you can secure the Register if you do not have it now. If you are in a very big organization and do not know but that it may be in one of the departments other than your own, let us know and we will tell you who has it near by from our own records.

SELLING IEN S-13

We have been suggesting contact with the Manufacturers' Agents National Association, 1724 W. Main St., Alhambra, Calif., whenever a representative or a manufacturer has asked us about things to sell or responsible individuals to represent them. Let us tell you a bit about this association.

It is a non-profit corporation, founded in 1947, to correct the unfair practices and abuses that existed in the agency business at that time. It now numbers 1,500 members in 42 states. It publishes a monthly magazine for agents and representatives concerned with selling. It also publishes an annual directory of members. The directory is distributed to manufacturers as a guide to responsible agents. Annual dues are $13.50 which includes $3.50 for the year's subscription to the magazine and a $10 credit toward advertising in the magazine during the year. Initiation fee is $10.

Best Investment: U. S. Savings Bonds

Americans now hold $36 billion in Savings Bonds. Sales last year of E and H Bonds provided cash for all E and H maturities and redemptions and left $200 million net to reduce the back-held debt.

If you write maker identify as IEN - 6626

HOW TO RESTORE CONCRETE FASTER, BETTER—AT LOWER COST!

BONDACTOR Concrete Gunning Equipment
Saves Money, Makes Money
on Nearly Any Maintenance Job

Bondactor concrete gunning equipment pays for itself many times over with labor-saving, cost-cutting performance on a wide variety of concrete restoration and maintenance jobs.

The Bondactor is used to repair column and beam encasements, ramps, loading docks, walkways, stairways, floors and other damaged or deteriorated concrete. Also used for fire-proofing, waterproofing and wet and dry sandblasting.

BEFORE, this loading dock was so badly damaged and deteriorated, it could hardly be used. Without a Bondactor, top slab would have to be removed, forms made and concrete poured.

AFTER applying concrete with the Bondactor, it's set and ready to go! No forms required, minimum cleaning. Gives a denser, stronger, long-wearing surface.

WRITE FOR INFORMATION!
Investigate Bondactor equipment today! State intended use.

Air Placement EQUIPMENT COMPANY
1006 West 24th Street
Kansas City 8, Missouri

If you write maker identify as IEN - 6627

Lamson PLUG NUTS

The advantages of plug nuts are many-fold. Both the designer and the production man will find they can solve many special fastening problems that cannot be economically solved in any other way.

For instance, plug nuts are the ideal solution to "one way" fastening where it is difficult or impossible to work from both sides of the assembly.

Plug nuts can often eliminate or simplify machining operations, improve the product, simplify design or reduce assembly, and hence, labor costs.

If you have an application where you think you might use plug nuts, send us the size required, or details of the application, and we'll be happy to send sample nuts for trial.

For additional detailed information send for the Lamson Plug Nut Brochure.

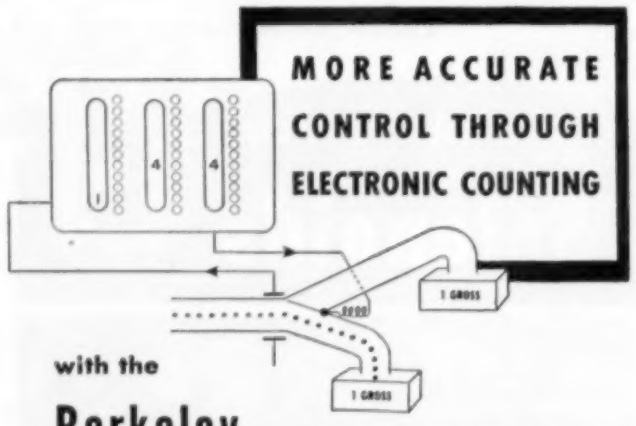
PLUG NUT SIZES AND TYPES

Plug Nuts are available in sizes ranging from No. 4 to ½" diameter—fine or coarse threads. Plug Nuts work in copper, brass, magnesium, aluminum, steel, alloy steel castings (die and sand) and forgings.

The LAMSON & SESSIONS Co.
1971 West 85th St. • Cleveland 2, Ohio
CLEVELAND AND KENT, OHIO • BIRMINGHAM • CHICAGO

If you write maker identify as IEN - 6628

MORE ACCURATE CONTROL THROUGH ELECTRONIC COUNTING



with the

Berkeley Preset Counter-Controller

FOR PRECISE CONTROL OF—

- Quantity packaged
- Cutting to length
- Stacking operations
- Sorting
- R.P.M.
- Flow

FEATURES—

- Controller uses high speed electronic counter
- Simple pushbutton control; digital indication
- Absolute accuracy of pre-selected number
- Single or dual control
- Designed for production use

Complete application data on request; write for details.

M-27

Berkeley *division* BECKMAN INSTRUMENTS INC.
Dept Q6, 2200 Wright Avenue, Richmond, California

If you write maker identify as IEN - 6629

CAN YOU REMOVE THIS BROKEN TAP FOR 18c?

A ½" x 13 broken high speed tap embedded in ¾" Brown & Sharp die stock.

Remains of broken tap after being removed by the Elox M-300 Electron Drill*.

Electrode (tool) used	.290" copper tubing
Set-up Time	60 Seconds
Cutting Time	180 Seconds
Clean-up Time	60 Seconds
	300 Seconds or 5 Minutes
Electrode Cost:	$0.02
Labor Cost:	.15 (@ $1.80 per hour)
Electricity approx.	.01
TOTAL COST:	$0.18

elox *corporation of michigan* LET US SHOW YOU HOW *T.M. Reg.
724 N. Rochester Road • Clawson, Michigan

If you write maker identify as IEN - 6630

for "INSTRUMENT-QUALITY" AIR IN COMPRESSED AIR OPERATIONS

HANKISON
MODEL A-100-D
Condensifilter

Featuring the New—Economical DISPOSABLE FILTER CARTRIDGE

- *CONDENSER*
- *MECHANICAL FILTER*
- *AUTOMATIC TRAP*

Combined in a single unit!

RATE OF CAPACITY: 100 scfm at 100 psig

MULTIPLE UNITS: Installed in parallel increase capacity

Consult us on your specific problems

WRITE . . . for illustrated bulletin DB-130

HANKISON CORPORATION

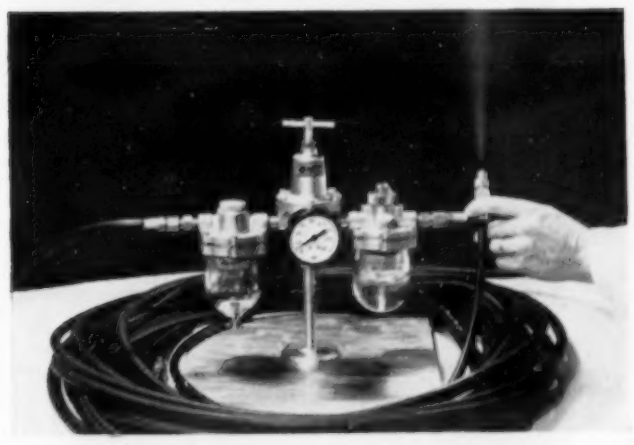
350 Biltmore Building • 951 Banksville Road • Pittsburgh 16, Pa.

If you write maker identify as IEN - 6631

tests prove

Norgren MICRO-FOG

DELIVERS LUBRICATING FOG AFTER TRAVELING THROUGH 130 FT. OF HOSE



FEATURES OF NORGREN MICRO-FOG LUBRICATORS FOR BEARINGS • GEAR BOXES • CHAIN DRIVES

- **VISIBLE OIL FEED**
- **CONSTANT OIL LEVEL**
  Rate of feed is not affected by oil supply.
- **OIL FEED CONTROLLED BY AIR**
  Gives accurate control and uniform rate of feed.

WRITE FOR NEW CATALOG NO. 600

PIONEER AND LEADER IN OIL FOG LUBRICATION FOR 26 YEARS

C. A. Norgren CO.
3432 So. Elati, Englewood, Colo.

VALVES — FILTERS — REGULATORS
LUBRICATORS — HOSE ASSEMBLIES

If you write maker identify as IEN - 6633

HANDLING . . Vacuum load grab available for non-porous materials

Source: BLAKESLEE MFG. COMPANY
Dept. IEN, Salem, Ill.

Illustrated bulletin, "Vac-U-Lift"

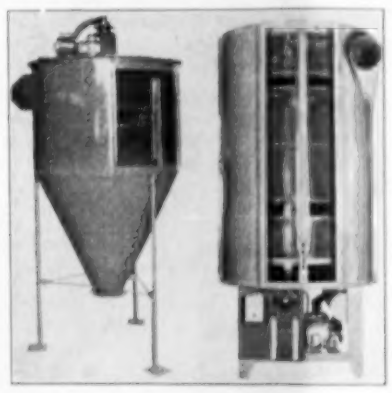
Steel sheets, asbestos sheets, plaster board, plywood, cartons, barrels, castings, pipes, tanks, concrete products, ceramic products, all can be handled by available designs of this new Vac-U-Lift load grab. It consists of one or more lifting heads fitted with sealing rings and connected to a centrally located motor driven vacuum pump. The pads are shaped for given types of load. One or more can be employed. Each rates 1000-lb. lifting capacity, based on handling flat steel sheet.

The pump is a rotary design with self-compensating composition blades. Rating is 8.3 cfm. at 28-in. maximum continuous vacuum. Drive is by a ½-hp. motor of specified electrical characteristics. The multiple head assemblies can be specified also, for spread between the individual heads and for type of overhead support, to apply on a crane or truck or special hoist. Control centers at a valve that applies and releases the vacuum.

If you write maker identify as IEN - 6634

DUST COLLECTING . . Cylindrical unit with reverse air jet cleaning action

Source: TURNER & HAWS ENGINEERING CO.
87 Gardner St., Dept. IEN, Boston 34, Mass.



300 to 10,000 cfm.

Dust laden air enters the housing of this new Model-R Aeroturn collector in tangential direction to employ centrifugal action for initial dust separation. The air and remaining dust turn inward to a wool felt filter medium supported on an expanded metal cylinder. The wool felt stops the dust and permits the air to move inward into an inner cylinder from where it is exhausted.

A motor at the bottom of the assembly drives a positive blower and rotates a central tube into which the blower air is delivered to issue through slots directed radially outward. This air moves over the surface of the wool felt to blow off the accumulating dust into a dust tube that remains in line with the air jet but outside the filter cylinder. This tube prevents re-deposit of the dislodged dust.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6635

Specify G-M PRECISION-ENGINEERED

SERVO MOTORS

RELIABLE PERFORMANCE
RUGGED CONSTRUCTION

ACTUAL SIZE

In the operation of—

- GUNFIRE CONTROLS
- ROCKET CONTROLS
- GUIDED MISSILES
- AIRCRAFT CONTROLS
- INDUSTRIAL CONTROLS

G-M Servo Motors can be supplied to meet rigid military specifications with regard to humidity, temperature range, vibration and altitude. Available in 2, 4 or 8 pole construction and for frequencies from 60 to 400 cycles. Write today for complete information.

Another product of G-M LABORATORIES • Inc.

4334 NORTH KNOX AVENUE, CHICAGO 41, ILLINOIS

If you write maker identify as IEN - 6636

FREE

NEW EXHAUST FAN CATALOG

Here is valuable data on how to plan effective exhaust fan installations, plus complete specifications of Emerson-Electric Exhaust Fans. Send today for Bulletin No. 773.

THE EMERSON ELECTRIC MFG. CO.
St. Louis 21, Mo.

EMERSON ELECTRIC
FANS • MOTORS APPLIANCES

If you write maker identify as IEN - 6637

New and Useful!

No. 111

WHITNEY - JENSEN
HAND PIPE CRIMPER

SAVE TIME ON THE JOB!

There are many times when you want to put a few quick crimps in a pipe-end, a duct, or an edge. HERE is the tool to do it! Lightweight, easy to use, and easy to carry in your kit. Makes good crimps any length up to 1½ inches. Capacity 20-guage galvanized sheet or the equivalent. Spring-return jaws. Polished handles. A Whitney-Jensen QUALITY Tool. Order yours today . . .

WEIGHT — ONE POUND
PRICE ONLY— $6.50
F.O.B. FACTORY

Write for our
NEW CATALOG
SHOWING OVER 75 USEFUL TOOLS

GOOD METAL-WORKING TOOLS SINCE 1910
WHITNEY METAL TOOL CO.
200 FORBES STREET, ROCKFORD, ILLINOIS

If you write maker identify as IEN - 6638

100th ANNIVERSARY 1854 — 1954

Specify CLARK
QUALITY INDUSTRIAL FASTENERS SINCE 1854

BOLTS • NUTS
RIVETS and SCREWS...

Quality • Dependability
Prompt Delivery
For further information, write
210 Canal Street

CLARK BROS BOLT CO.
MILLDALE, CONN.

For Greater Security...
Fasten Fast with Clark Fasteners

If you write maker identify as IEN - 6639

500 MORE EMPLOYEES

...yet paper towel costs go down

The Pennsylvania plant of one of America's well-known companies* finds Mosinee Sentinel Towel Service is still saving them $300.00 per month, compared with previous towel service. This tremendous saving exists in spite of the fact that (1) number of employees has increased by 500, and (2) plant has increased its work week from 5 to 7 days.

*Name on request

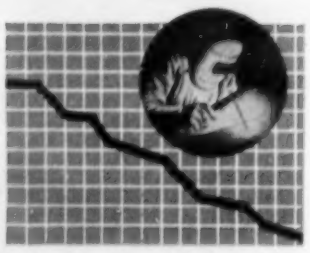
BAY WEST PAPER CO.
1088 West Mason Street
GREEN BAY, WISCONSIN
A Division of Mosinee Paper Mills Co.

MOSINEE *Sulphate Towels*
PREP-TOWLS • ZIP-TOWLS • TRIM-TOWLS • TURN-TOWLS • ROLTOWLS

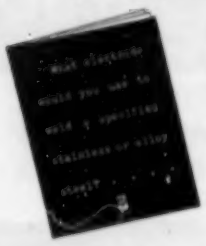
If you write maker identify as IEN - 6640

Stainless Fabrication:

UNIFORMITY OF WELD METAL REDUCES REJECTS



Reports from users indicate that Arcos Rods and Electrodes are lowering substantially the reject rate on many stainless welding jobs. An important factor in this time and money saving picture stems from Arcos quality controls in manufacture. The consistent uniformity of Arcos weld metal provides a sure stepping stone to improved welds. To get started, write today for "What Electrode Would You Use."



The ARCOS CORPORATION
1500 South 50th Street, Philadelphia 43, Pa.

If you write maker identify as IEN - 6641

Proved Features— Improved Protection

- Fence fabric galvanized throughout
- Improved welded gates and locking devices
- Extra post and rail ties
- Heavy post caps and barb arms
- H-section line posts 15% heavier
- Engineered erection

CONTINENTAL STEEL CORPORATION
Kokomo, Indiana
Send me FREE copy of "Planned Protection" —complete manual on property protection.
Name
Address
City State

*TRADE MRK. REG. U.S. PAT. OFF.

CONTINENTAL STEEL CORPORATION

If you write maker identify as IEN - 6642

CONNECTOR . . Duplex receptacle, surface type, 3 wire grounding design

Source: PASS & SEYMOUR INCORPORATED
1307 Milton Ave., Dept. IEN, Syracuse 9, N. Y.

No solder or tape

Surfex trade names this new Catalog H672 receptacle. It is designed for surface wiring with non-metallic cable. It has two current-carrying contacts plus a third contact to take U-shaped grounding blades on special 3-wire caps. Ground terminals are identified by green hexagonal binding screws. The outlets have double grip contacts. Current carrying parts are mounted on arc resistant Urea bases.

The receptacle mounts on a 2 by 4-in. stud. It has knock-outs for No. 12 or No. 14 standard non-metallic sheathed cable. Current rating is 15 amp. on 110 volts. The design meets REA and Federal Specifications. It is approved by Underwriters' Laboratories.

If you write maker identify as IEN - 6643

GRINDING . . Flexible shaft machine with motor on caster equipped stand

Source: STOW MFG. COMPANY
25 Shear St., Dept. IEN, Binghamton, N. Y.

For utility use

Type G40-C is a new portable flexible shaft grinding machine with a ½-hp. motor and a 12-ft. ⅜-in. flexible shaft. The machine is intended particularly for construction and maintenance work. It is supplied with a hand piece and with an extension cord and plug for operation, to specification, on 110 or 220-volt ac. The motor can be specified in either open or totally enclosed design. The three-caster support and trunnion mounting for the motor permit an operator to manipulate the grinder in any position.

If you write maker identify as IEN - 6644

Automatic control of audible signals, heating and air conditioning equipment, flush valves, lighting circuits, water flow equipment, plant utilities is maintained on a minute by minute basis by the new coded signal receiver and the Master Time and Program Control transmitter developed by International Business Machines Corp., 590 Madison Ave., Dept. IEN, New York 22, N. Y. Code pulses are transmitted to individual receivers, the first pulse actuating a code selector in all receivers tuned to the frequency being transmitted. The second pulse selects those units which are to function, the time interval between pulses determining which receivers will operate. Signal duration is preset in each receiver. Any one of four frequencies can be selected for transmission over regular ac. lighting circuits in a given minute. Eight basic circuits can be supervised on each frequency from a single transmitter source.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6645

Radiant Heat

If your problem involves:

VULCANIZING RUBBER • DEGREASING METALS
BAKING VARNISH • HEAT TREATING LEATHER
DEHYDRATING FOOD • PASTEURIZING FOOD
DRYING LACQUER, INK, PAINT, CERAMICS
GLASS, FIBRE, COMPOSITION OR IF YOUR PROBLEM REQUIRES CONTROLLED HEAT FOR OTHER APPLICATIONS.

And if you now use:

AIR DRYING • GAS, OIL OR ELECTRIC HEAT

You will be amazed by the increased quality control and big savings in money, time and labor when you use INFRALITE RADIANT HEAT.

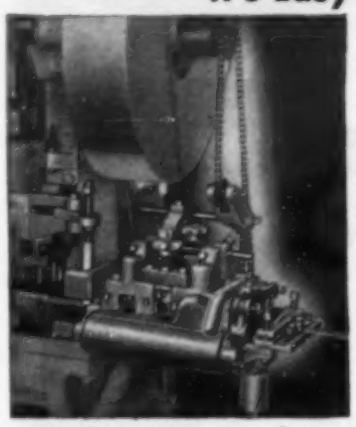
WITHOUT OBLIGATION, ASK OUR REPRESENTATIVE TO CALL, OR WRITE FOR BULLETIN No. 54

THERMEX *Company, Inc.*
537 BERGEN ST., HARRISON, N. J.
HU 5-2323

If you write maker identify as IEN - 6646

Get RAPID-FIRE PRODUCTION from your PUNCH PRESSES

It's Easy with WITTEK Automatic Roll Feeds



Wittek automatic roll feeds fit all makes and sizes of punch presses — provide maximum efficiency and extreme accuracy in the high speed automatic feeding of strip stock. Made in single roll, double roll, and compound types with straighteners, in models to feed (push or pull) in any direction. Length of feed is easily adjusted to meet individual requirements.

4472

WITTEK Reel Stands

Simplify Handling of Coiled Stock

Choice of standard models to facilitate handling coiled stock . . . from small, light coils to those weighing up to 800 pounds. Larger reel stands automatically center the coils — provide frictional braking action to prevent overrunning, maintain uniform coil slack.

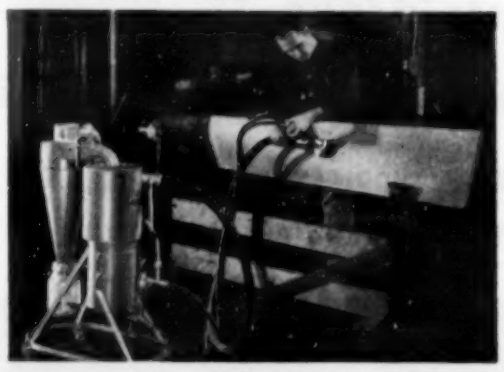
Write for full particulars

WITTEK Manufacturing Co.
4336 W. 24th Place, Chicago 23, Illinois

Automatic ROLL FEEDS AND REEL STANDS

If you write maker identify as IEN - 6647

THIS IS IT...



For faster, better, *dust-free* metal cleaning...

NOTHING EQUALS THE V-B JUNIOR

America's newest, simplest low cost *blast cleaner*

- **Completely Dust-Free** — Patented Vacu-Blast pickup enables V-B JUNIOR to operate **anywhere**.
- **Really Cleans** — Gives metal the clean surface needed for perfect welding or painting — faster and better than grinding or wire brushing.
- **Portable** — Caster-mounted, weighs only 80 pounds.
- **Economical** — Low first cost, low operating cost, negligible maintenance... economy any way you look at it.

GET THE FACTS... Write today for the full story...

VACU-BLAST CO. INC.
P. O. BOX 885-P • BELMONT, CALIFORNIA

If you write maker identify as IEN - 6648

New! Incomparable!

dyna-trol ELECTRIC FURNACES

COMPARE THESE FEATURES

- Infinite Zone Control to 2000° and 2300°F
- Zone temperature indication by Pyrometer Selector Switch
- Porcelain Element Holders
- Automatic Hold and Cut-off instrument available
- Infinite Variety of Time-Temperature Curves Obtainable
- Rugged Construction. Highest quality insulation used.

COMPARE THESE PRICES

Firing chamber (H. W. D.)	Semi-Auto. prices	Auto. prices
6"x12"x12"	$295.	$432.
12"x12"x12"	$405.	$550.
9"x 9"x18"	$480.	$625.
14"x14"x14"	$525.	$680.
20"x20"x20"	$975.	$1140.
18"x18"x36"	$1125.	$1375.
(To 2000° Maximum Temp.)		

Over 40 Standard Models — Write for complete literature

L&L INDUSTRIAL DIVISION
MANUFACTURING CO.
Chester 30, Pa.

Some Territories Available For Representation

If you write maker identify as **IEN - 6649**

SKINNER V2 STAINLESS STEEL SOLENOID TWO-WAY CUT-OFF VALVES

. . . for Air, Water, Inert Gases, Oils & Other Media

Miniature Skinner V2 Stainless Steel Valves are competitively priced, yet skillfully engineered to highest quality standards. Stainless steel internal parts, leakproof operation, and direct mounting make them ideal for a wide range of applications.

V2 Valves are small (weigh 9 ozs.), yet give performance measured in millions of cycles. They feature "fail-proof", bubble-tight shut-off: pressure and spring combine to snap valves to normal position at the instant current goes off.

SPECIFICATIONS: Type: Two-Way, Normally Open or Normally Closed; Pressure Range: 0-250 PSI; Orifice Diameter: 3/64" to 1/8"; Pipe Size: 1/8" or 1/4" NPT; Voltage: All common AC, DC voltages. *Write for Bulletin 534.*

Skinner ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY

110 Edgewood Ave., New Britain, Conn.

If you write maker identify as **IEN - 6650**

DO YOU USE OR MAKE ANY OF THE PRODUCTS IN THIS LISTING?

List of Users

The types of industries listed are all repeat users of **Tru-Lay Push-Pull Controls.** Experimental applications are not shown.

Agricultural Equipment
Air Conditioning Equipment
Aircraft & Parts
Automobiles
Bakery Equipment
Boats & Ships
Bottling Machinery
Brewing & Distilling Equipment
Business Machines
Buses & Motor Trucks
Candy Making Machinery
Canning Machinery
Ceramics Machinery
Chemical Processing Machinery
Coal Mining Machinery
Coin Operated Machines
Construction Machinery
Dairy Products Machinery
Dental & Surgical Equipment
Die Casting Machinery
Diesel Engines
Drinking Water Coolers
Electrical Appliances
Electrical Generating Equipment
Electrical Machinery
Electrical Transmitting Equipment
Electronic Equipment
Elevator Control Panels
Fire Protection Equipment
Food Processing Equipment
Forging Machinery
Foundry Equipment
Gas & Oil Production (Test Stands)
Glass Making Machinery
Grain Processing Equipment
Hat Machinery
Heating Equipment
Hydraulic & Pneumatic Equipment
Ice Cream Making Machinery
Laundry & Dry Cleaning Equipment
Leather Working Machinery
Lumber & Saw Mill Machinery
Marine Equipment
Materials Handling Equipment
Metal Mining Machinery
Metal Working Machinery—Machine Tool
Military & Naval Equipment
Motorcycles & Bicycles
Nuclear Science Equipment
Oil Refinery Equipment
Ordnance
Packaging Machinery
Paint Making Machinery
Paper Making Machinery
Photo Equipment (manufacture)
Plastics Fabricating Machinery
Plastics Producing Machinery
Power Plant Equipment
Printing & Binding Machinery
Quarrying Machinery
Radio & Television (manufacture)
Railroad Equipment
Road Building & Maintenance Equipment
Rubber Processing Equipment
Safety Locks on Fuse Panels
Sanitation Plumbing (Floor Valves)
Shoe Machinery
Steel Mill Machinery
Telephone & Telegraph Machinery
Textile Machinery
Waterworks Equipment
Welding Equipment
Wire Making Machinery
Woodworking Equipment
X-Ray Machines

Whether your interest is in a single application of this versatile

PUSH-PULL CONTROL

or in its inclusion as a component of the product you manufacture, we would welcome your request for our DATA FILE for your further study.

Because TRU-LAY PUSH-PULL CONTROLS are "SOLID as a rod but *FLEXIBLE* as a wire rope" their use has simplified the design and improved the operation of literally hundreds of products as indicated in the accompanying list of repeat users.

These fine controls are designed, and painstakingly built, to have the qualities of ACCURACY, HIGH LOAD CAPACITY, FREEDOM FROM TROUBLE, LONG LIFE, FLEXIBILITY . . . they are frequently and successfully used in conjunction with electrical, hydraulic and air controls . . . they are thoroughly effective under almost any operating condition.

Here are some of the jobs they handle well . . . HOT jobs on jets and industrial furnaces . . . COLD jobs down to −70°F. . . . WET jobs in food processing and marine applications . . . DIRTY jobs in cement mills and coal mines . . . CORROSIVE jobs in chemical processing . . . HEAVY, TOUGH jobs on construction machinery . . . LIGHT DUTY jobs on business machines, drinking water coolers . . . REMOTE jobs 150 feet or more from control point . . . they DAMPEN VIBRATION to protect delicate instruments . . . and LUBRICATION of the inner, working member is taken care of *for life* during assembly.

• The six booklets and bulletins in this DATA FILE will answer further questions you may have about this versatile and dependable tool, and will also provide you with the means of defining to us the application you may be interested in.

PUSH PULL

Write for a copy *without obligation*

DATA FILE

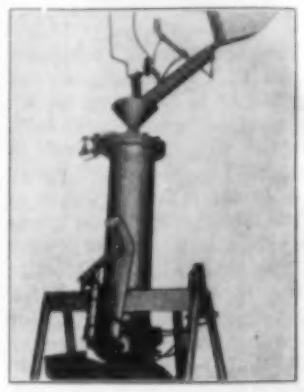
ACCO

AUTOMOTIVE and AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE
461 Stephenson Bldg., Detroit 2
2216 South Garfield Ave., Los Angeles 22 • Bridgeport 2, Conn.

If you write maker identify as **IEN - 6652**

DRYING . . Dewatering equipment, timer controlled for granular material

Source: HYDRO-BLAST CORPORATION
2550 N. Western Ave., Dept. IEN, Chicago 47, Ill.



Built to order

Granular material in slurry form is delivered into this new dewatering equipment through an air operated plug valve. The slurry rises in the main housing to a predetermined level at which point the valve closes and a timer opens a main air valve. Air pressure, applied on the material, forces the liquid through the granular material and out through a screened bottom door into a suitable drain.

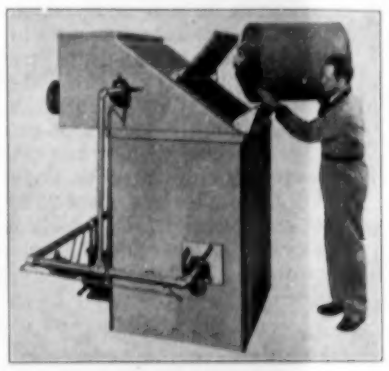
At the end of the predetermined interval the air pressure is shut off from the housing and the bottom discharge door is opened by its air cylinders. Then a puff of air is applied to discharge the dewatered material into a receiving hopper and the equipment is ready for the next operating cycle. A pressure switch prevents the discharge door from opening while the main housing is under pressure. The door closes by timed power after the material is discharged.

Air pressure at 85 lb. is employed with average air consumption of 15 cfm. Electric power is supplied to the solenoid valves and timer from a 110-volt ac. circuit. Capacity ranges to 5 ton per hr. based on 100 lb. per cu. ft. material.

If you write maker identify as **IEN - 6653**

INCINERATOR . . Gas or oil fired, down draft for smokeless operation

Source: WINNEN INCINERATOR CO.
932 Broadway, Dept. IEN, Bedford, Ohio



Assembles on job

Three sizes, with 10, 15, and 20-bu. capacities, are available in a new Model C-2 line of Wincinators. The unit is designed to burn wet or dry refuse, garbage, cartons, waste paper, wood crates, without odor or smoke.

The fuel is pressurized to multiple burners for primary and secondary combustion. A smoke baffle in the secondary combustion chamber combines with a settling chamber and the down draft action for complete combustion of smoke and odor. The unit will burn natural, manufactured or liquid petroleum gas or oil. It is available for installation indoors or outside. It is lined with fire brick for temperatures to 2,750 deg. F.

Equipment can be specified for automatic operation in which the length of burning intervals can be controlled and pre-selected. Two types of prefabricated chimney can be added. An extra jacket housing is available also to keep the contact surfaces cool as well as to assure smokeless operation, during continuous feeding, while the feed doors are left open.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6654**

Stop CORROSION in your Steam System WITH CORAVOL

When fed to your steam system, **CORAVOL:** (1) *prevents* corrosion in steam and condensate lines. (2) *cleans out* clogging rust deposits resulting from previous corrosion. Thus, **CORAVOL** protects lines, increases the effectiveness of heat transfer surfaces, restores original capacity of lines and the operating efficiency of valves and traps.

CORAVOL is part of a complete technical service which provides special chemical formulas for: Boiler Feed Water . . . Foam Prevention . . . Hot Water Supply . . . Refrigerating Brine . . . Cooling and Condenser Water . . . Rapid Scale Removal . . . Coagulation . . . Algae Control.

Write TODAY to Western Chemical Company, 715 Washington Street, Kansas City, Missouri—for complete FREE data about the **CORAVOL** process.

WESTERN CHEMICAL CO.
715 WASHINGTON KANSAS CITY, MO.

If you write maker identify as **IEN - 6655**

What can Multigrip do for you?
Protects your floor and workers too!
A tough steel plate to make floors stronger,
No more repairs and it lasts much longer.
Accident rates will fall way down,
But workers won't . . . they can "go to town";
Traction from risers protects from slip,
No protrusions on which to trip.

USS multigrip FLOOR PLATE

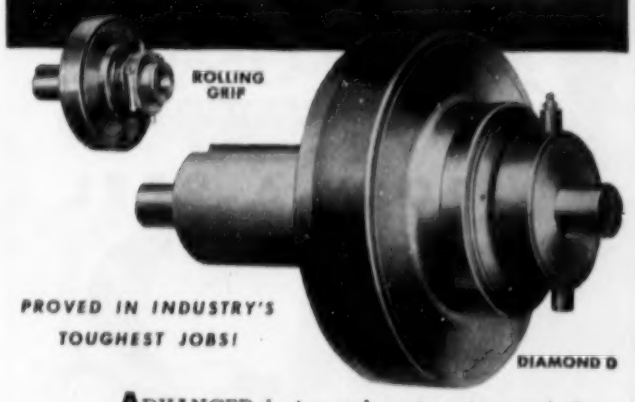
UNITED STATES STEEL CORPORATION, PITTSBURGH
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
UNITED STATES STEEL SUPPLY DIVISION, CHICAGO
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

Sold by leading distributors from coast to coast 4-6653A

UNITED STATES STEEL

If you write maker identify as **IEN - 6656**

DODGE FRICTION CLUTCHES



ADVANCED design and engineering mark the complete Dodge line of friction clutches, in a full range of sizes, with capacities from 1/3 hp. to 470 hp. Rolling Grip clutches have no toggles, combine ease of control with positive drive. Diamond D clutches, compact, fully enclosed, have stamina for grueling service. For detailed information write

DODGE MANUFACTURING CORPORATION, 600 Union St., Mishawaka, Ind.

DODGE
of Mishawaka, Ind.

If you write maker identify as **IEN - 6657**

Drill CONCRETE TILE CERAMICS GLASS GRANITE BRICK IN SECONDS with the TRUCO WATER SWIVEL and TRUCO DIAMOND DRILL BITS

Same type Truco diamond bits long used in mining and oil well drilling are now available for drilling holes 1/4" to 6 1/2" I.D. any depth. Truco Diamond Drill Bits in Truco Water Swivel can easily save entire cost on first application. For electricians, plumbers, carpenters, masons, tile setters, maintenance crews, etc. Booklet and price list by return mail. Write;

WHEEL TRUEING TOOL COMPANY
48-3200 West Davison Avenue • Detroit 38, Michigan

If you write maker identify as IEN - 6658

JOHNSON BAND SAWS

SPECIFICATIONS—MODEL B

Capacity—5" rounds, 10" flats.
Height Overall—(Closed)—32".
Blade Length—7'5" x ½" x 23 ga.
Floor Space—46" x 28".
Weight—(Uncrated) 235 lbs. Crated 280 lbs. Boxed for Export 400 lbs.
Wheel Diameters—10"
Motor—½ H.P. any voltage available.
Speeds—45, 90 and 150 ft. per min.
Casters—Optional at slight extra cost.

MODEL J, 10" X 18" CAPACITY ALSO AVAILABLE

WRITE FOR DETAILS

JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

If you write maker identify as IEN - 6659

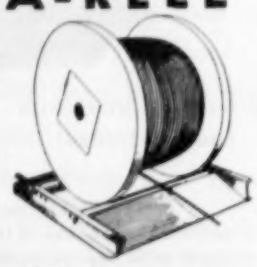
Time to Discard

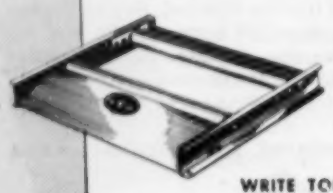
OLD-FASHIONED WAYS

Jacks . . props . . shores . . horses . . why fool with these obsolete methods of handling reels? DO IT THE MODERN, EFFICIENT WAY! Reel or unreel wire, cable, rope with

ROLL-A-REEL

Simple, strong, easily handled stand for your reels to save time and labor. Adjustable slots for wide variety of reel sizes.





Style A:
2,000 lbs. cap. 37.50
Style B:
4,000 lbs. cap. 75.00
F.O.B. Cincinnati

WRITE TODAY FOR DETAILS

ROLL-A-REEL

1100 SYCAMORE AT CENTRAL PARKWAY
CINCINNATI 2, OHIO

If you write maker identify as IEN - 6660

NEW Ejectopump

COMPRESSED AIR OPERATED

for ABRASIVE and INFLAMMABLE LIQUIDS and SEMISOLIDS

Requires no lubrication

NO GLANDS
NO BEARINGS
NO MOVING PARTS

Now available for the first time in the U. S. Especially suitable for handling latex, bitumen, paint, chocolate, fruits and vegetables suspended in water, pottery slip, carborundum slurries, and various chemicals. Will not cause aeration or coagulation of materials. Available in 1½", 2", 3", 4" and 6" sizes.

Write today for complete details.

FERRO

FERRO CORPORATION
Supplies Division
4180 EAST 56th STREET • CLEVELAND 5, OHIO

If you write maker identify as IEN - 6661

MARKING . . Wrapping machine applies glue and wraps label on tube

Source: POTDEVIN MACHINE CO.
285 North St., Dept. IEN, Teterboro, N. J.

Quickly adjustable

The operator of this new Model TL-1 machine positions dry labels to be picked up by the machine in timed step with feed of paper tubes from a hopper. The machine applies glue to the label, forwards it to the labeling station. It meets the tube and is wrapped around it. The tube, with the label in place, is carried upward for discharge above the operator between traveling conveyor belt that holds the label in place while the glue is setting.

The machine will handle paper tubes ranging from ¾ to 1¾ in. in diameter and to 27 in. in length. Variable speed drive permits operation at 30 to 60 tubes per minute. A safety device prevents a label from being fed when a tube is not in receiving position.

If you write maker identify as IEN - 6662

GENERATOR . . Engine driven ac., 5 kw. on 110 or 220 volt single phase

Source: KOHLER COMPANY
1230 High St., Dept. IEN, Kohler, Wis.

Cannot freeze

Illustrated is new assembly of the company's Type K660 two-cylinder four-cycle air cooled engine and a 5-kw. ac. generator. The assembly is available for manual or remote starting. Optical accessories include radio shielding, oil filter, vibro dampers, gas valve and carburetor for combination gas-gasoline operation, 55-gal. fuel tank and fittings and two 6-volt starting batteries. Overall dimensions are about 23 by 33 by 29 inches. Weight is about 480 pounds. The assembly is known as Model 5RM61. It is available for 110-volt single-phase operation or for 110/220 volts.

If you write maker identify as IEN - 6663

Workers are protected against high and low frequency injurious noise by this new Straightaway muff-type unit. Three styles include a medium weight cotton helmet, a light weight nylon mesh helmet and a headband assembly for intermittent use. Manufacturer is David Clark Co., Dept. IEN., Worcester 10, Mass.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6664

No tool grinding expense and *minimum* machine down time for tool changing — these are the advantages you obtain from multiple-edge Kendex "throw-away" insert tools.

Kendex precision-ground buttons have Kennametal's high wear-resistance, for long life. Screw-mounted, they can be rotated in seconds to new cutting positions without removing or resetting the tool holder . . . a great time-saving feature. When all cutting edges are used, the insert is thrown away—replacement cost is slight compared to that of regrinding.

Ask your nearest Kennametal tool representative to help you apply this cost-saving tooling to suitable operations in your plant. Kennametal Inc., Latrobe, Pa.

A-8

*Registered Trade-Marks

KENNAMETAL
CEMENTED CARBIDE TOOLING THAT INCREASES PRODUCTIVITY

SALES OFFICES IN PRINCIPAL CITIES

If you write maker identify as IEN - 6665

Quiet, fume-free sweeping at a power cost of 10¢ per hour!

(Includes recharging and depreciation on battery and charger.)

- Sweeps over 60,000 sq. ft. an hr.
- Cleans 48" path (with sidebrush)
- Works a full shift on one charge

It costs just a dime an hour (power costs) for fast, clean sweeping with the Tennant Electric Sweeper. Does the work of a 3 to 8-man crew . . . picks up dust, dirt and litter as it goes . . . runs 5 to 7 hours on one charge. Battery is 36-volt, 18 cell.

Has easy auto-type steering; turns in a 65" radius. Reverses instantly—no gears to shift. Fewer moving parts mean fewer repairs, less downtime.

TENNANT
ESTABLISHED 1870

Write for details.
G. H. TENNANT CO.
2574 N. 2nd Street
Minneapolis 11, Minn.

ELECTRIC SWEEPER

If you write maker identify as IEN - 6666

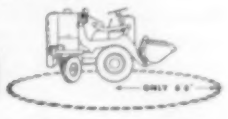
SPEED 1-MAN HANDLING

in plant, yard or box car

Jaeger Auto-Scoop moves a bigger load, turns shorter, carries faster, can dump higher and farther than comparable 12 cu. ft. scoop loaders. Lowest bucket tilt-back makes possible an always full bucket and lower carry. Simple controls, hydraulic functioning. Write for Catalog L12-4.

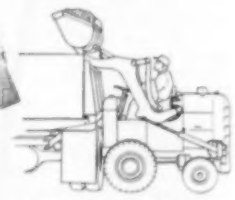
20% more lifting capacity (1200 lbs.).

JAEGER LOAD-PLUS



5" shorter turning radius (6'6"). Faster speeds to 13.88 mph in reverse, 7.66 forward.

Low level bucket tilt-back permits full bucket loading, better carrying.



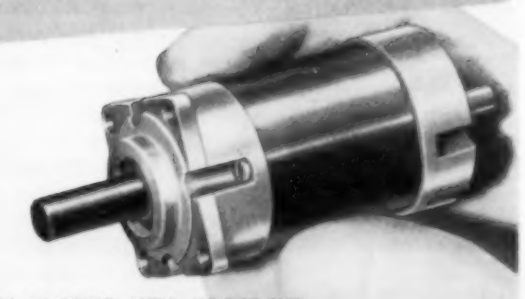
Higher clearance (6'8"), more reach (2'7").

Also available in 1 yd. capacity, with torque converter and power steering, for handling heavier loads to 5000 lbs; 2-wheel or 4-wheel drive.

THE JAEGER MACHINE COMPANY
614 Dublin Avenue — Columbus 16, Ohio

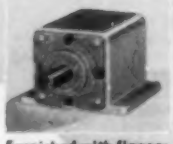
If you write maker identify as IEN - 6667

NEW! MINIATURE INTEGRAL PLANETARY GEAR REDUCER



CHANGES HI-SPEED INTO HI-TORQUE

Rugged, compact, precision gear train component, changes high speed into high torque at low speed. Continuous long term torque output ranges to 1000 in. oz., and for short periods this may be greatly exceeded. Basic unit diameter is 1¼" with 3/16" dia. input shaft, and 5/16" dia. output shaft. Length depends on any of standard speed reduction ratios from 18.78 to 1, to 21,808 to 1. Write today for information on Globe Integral Planetary Gear Reducers.



Furnished with flanges, or above housing for base mounting.

Globe industries, inc.

MOTORS • GEAR REDUCERS • GENERATORS • GOVERNORS • SERVOS
BLOWERS • FANS • ACTUATORS • SWITCHES • GYROS • VIBRATORS

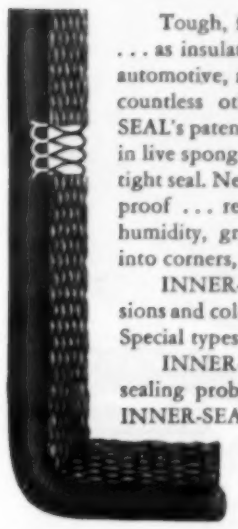
1788 STANLEY AVE., DAYTON 4, OHIO

If you write maker identify as IEN - 6668

Bridgeport INNER-SEAL

INDUSTRY'S MULTI-PURPOSE SEALING MATERIAL

Free folder, with engineering data and specifications, tells how industries use INNER-SEAL applications to eliminate sealing problems.



Tough, flexible INNER-SEAL has many uses . . . as insulation, cushioning, gasketing . . . in the automotive, railway and refrigeration fields, and in countless other fields of manufacture. INNER-SEAL's patented construction—spring steel molded in live sponge rubber—makes an effective, pressure-tight seal. Neoprene coated INNER-SEAL is waterproof . . . resists temperature extremes, sunlight, humidity, grease, oil and abrasion. It fits snugly into corners, around curves—lasts for years.

INNER-SEAL is stocked in standard dimensions and colors. Heavy-duty type available in black. Special types or colors made to order.

INNER-SEAL is constantly solving all sorts of sealing problems. If *you* have one — why not try INNER-SEAL?

FREE SAMPLES
and complete information
WRITE TODAY

BRIDGEPORT FABRICS, INC., BRIDGEPORT 1, CONN.

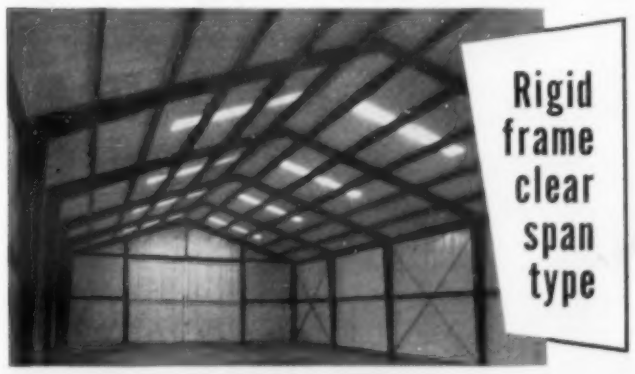
If you write maker identify as IEN - 6669

Need Light Manufacturing or Utility Buildings?

Any Type Building you need erected with USF prefabricated standard building units!

The complete line of USF prefabricated all-steel buildings offer you a variety of standard building units that can be combined to form any type light or medium service building you need. Standard USF 26′ and 30′ wide buildings offer 10′ and 12′ heights in 13′-6″ lengths . . . singly or as multiple buildings.

For heavier service, investigate the USF 40′ wide clear span, rigid frame building with 14′ height and 20′ lengths . . . single or multiple.



This building offers truck or access doors, sides or ends and projected sash on two levels in any location. Other buildings have wide variety of side wall treatments to suit all uses.

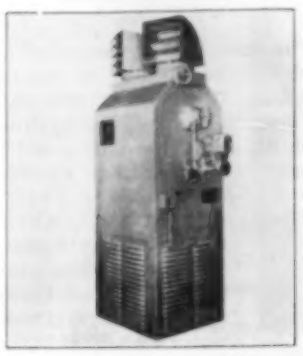
All sheet attachment is with exclusive clip-and-wedge method . . . no screws, rivets or welding. Insulation always available. Get the full facts and plan your own building with USF all-steel prefabricated building units!

UNITED STEEL FABRICATORS, INC.
Building Sales Dept.
WOOSTER, OHIO
MANUFACTURERS OF Hollow Metal Doors and Frames • Prefabricated Metal Buildings • Corrugated Metal Window Wells • Highway Guard Rail • Structural Bridge Flooring • Corrugated Metal Pipe

If you write maker identify as IEN - 6671

HEATING . . Gas fired space unit has stainless steel combustion chamber

Source: DRAVO CORPORATION
Fifth & Liberty Aves., Dept. IEN, Pittsburgh 22, Pa.



No refractories

The gas burner in this new Paraflo heater fires into a combustion chamber made of stainless steel and strap supported in the housing to permit expansion and contraction with changing temperature. The hot combustion gases make two passes in the chamber and then move through a convector section to the waste outlet connection.

Two sizes rate 200,000 btu. per hr. in a Model 20-G and 250,000 btu. per hr. in a Model 25-G. Both are companion units to the oil fired space heater, previously described IEN-12464-53. Both will handle natural, manufactured, mixed gases and liquified petroleum gas.

The gun type burner is a self-contained assembly including a combustion fan driven by a ¼-hp. resilient mounted motor for operation on 110-volt 60-cycle single-phase ac. The burner is equipped with a thermal electric safety pilot. Combustion air is supplied in correct amount independent of varying flue draft. A positive mechanical shut-off valve, operated by a governor on the motor shaft, a fool proof pilot safety and an electrically ignited gas pilot are standard equipment. The burner requires gas pressure of 4 to 13.5 in. of water at the pressure regulator inlet. It is AGA listed.

Air is drawn in at floor level by a motor driven blower. It is directed around the combustion chamber and through passages in the convector. It picks up heat and is delivered through two adjustable outlets that can be rotated through 360 degrees. Velocity is sufficient to warm an area 180 ft. in diameter. The unit also can be connected into a duct and, in the summer, the fan can be operated alone for ventilation.

If you write maker identify as IEN - 6672

CONNECTOR . . Insulated terminal, color coded for No. 8 to 4/0 wire

Source: AIRCRAFT-MARINE PRODUCTS INC.
2100 Paxton St., Dept. IEN, Harrisburg, Pa.

Details on request

Ampli-Bond trade names this new insulated terminal for heavy duty wire. It is applied by a pneumatic hydraulic crimping tool supplied by the terminal manufacturer. It employs a separate sealing ring that grips the wire insulation and prevents exposure of the conductor during sharp bends or excessive flexing or vibration. The ring is non-conducting and forms a barrier to foreign objects coming in contact with the current carrying terminal members.

Terminal insulation is vinyl plastic. It will withstand a minimum of 6,000 volts. Color coding indicates the various wire sizes. The terminal is available in a range of tongue shapes, stud sizes and in both butt and parallel connectors.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6673

NOELTING **Faultless** ENGINEERED **TRUCK CASTERS** CUT HANDLING COSTS

300 Series Double Ball Bearing Swivel Plate Caster with Steel Wheel

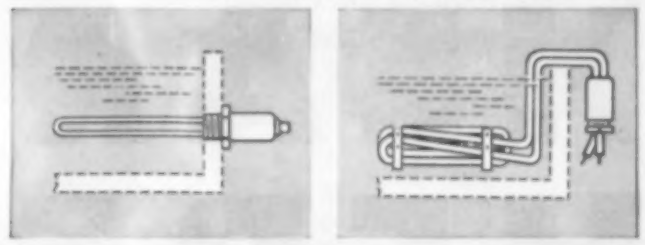
NEW! DRAWN STEEL WHEELS FOR LONGER WEAR

Faultless Casters equipped with the new Drawn Steel Wheels provide (1) *longer life,* (2) *greater efficiency,* (3) *at minimum maintenance* and, thus, (4) *lower operating cost per mile.*

Faultless Steel Wheel Casters help industry reduce overhead by maintaining fast, fluid production lines. These precision-made wheels are machined to tolerances typical of fine tools and like any quality equipment, are the best investment for long uninterrupted service. Write for Bulletin

FAULTLESS CASTER CORPORATION
Dept. IE, Evansville 7, Indiana
Branches in Principal Cities—Canada Factory: Stratford, Ont.

If you write maker identify as IEN - 6674



Heat liquids fast, efficiently with Calrod* immersion heaters

Applicable to nearly any liquid heating job, long-life G-E "screw-in" and "over-the-side" Calrod immersion heaters give you this top performance:

Efficiency—heaters are right in liquid, for maximum heat transfer.

Cleanliness—no open flame to cause smoke and fumes, create fire hazards.

Uniformity—adaptable to thermostatic control for precise temperature regulation.

For more information, see your G-E Apparatus Representative or Distributor. And write now for—

FREE APPLICATION BULLETINS

GEA-5077—"Heating Liquids with Electric Heaters"
GEA-5545—"Calrod Heater Selector Guide"
Sect. 720-112, General Electric Co., Schenectady 5, New York.

*Reg. Trade-mark of General Electric Co.

GENERAL ELECTRIC

If you write maker identify as IEN - 6675

NOW, ABOUT B&W HEAT EXCHANGER and CONDENSER TUBES

SEAMLESS and WELDED

B&W Bulletin TB-329A contains specifications and data on various grades, size ranges and general application data. It's written to help you. Send for it, Bulletin TB-329A.

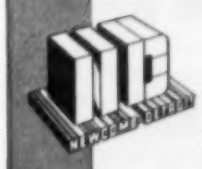
TA-4053 (LP)

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION
Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Steel Tubing
Alliance, Ohio—Welded Carbon Steel Tubing

If you write maker identify as IEN - 6676

NEWCOMB-DETROIT

PIONEERS IN ENGINEERING, MANUFACTURING & INSTALLING OF



INDUSTRIAL OVENS
•
SPRAY BOOTHS
•
PARTS WASHERS
•
DUST COLLECTORS
•
HEAT and AIR SYSTEMS

ESTABLISHED 1912
• DETROIT DIVISION
• GRAND RAPIDS DIVISION
• NEWCOMB INDUSTRIES, LTD., WINDSOR DIVISION

For Bulletins and Quotations, Wire, Write or Call—
NEWCOMB-DETROIT
5757 Russell St., Detroit 11, Mich.
TR 3-2100

If you write maker identify as IEN - 6677

HEAR HERE

NEW Model 45 Acousti-Booth — spacesaving configuration provides amazing acoustical performance.

50% Reduction in loudness of noise — 14 db attenuation — provides full-length Booth performance.

New triangular configuration permits 7 spacesaving multiple Booth arrangements.

All steel, doorless construction — silver gray hammered finish — easy installation — no maintenance.

WRITE for Bulletin A-131 for details, including auxiliary floor stand, light fixture, and brackets.

ORDER TODAY

ONLY $100.00
F. O. B. CHICAGO
light fixture extra

MODEL 45
35½" wide—32" deep—36" high.

BURGESS-MANNING COMPANY
Architectural Products Division
5970-A Northwest Highway
Chicago 31, Illinois

If you write maker identify as IEN - 6678

Wire Drawing Mill, Jones & Laughlin Steel Corporation, Aliquippa, Pa.
Aluminum Paint: Vita-Var Corporation, Newark, N.J.

J&L uses ALUMINUM PAINT to reduce collision damage in this mill

"These poles would be knocked down in a couple of days if they weren't brightly coated with aluminum paint," reports F. S. Wilkins, Assistant Superintendent of J&L's Wire Mill. In the main drawing operation, hand operated cranes are used continuously in very close proximity to supporting structures and poles. But aluminum paint keeps the poles bright and shining, always plainly visible to crane operators. This precaution has greatly reduced collision damage and has improved the appearance of the mill as well.

Aluminum Paint's high reflectivity and attention-attracting brightness make it the ideal coating for industrial uses such as this where good visibility is essential.

Alcoa does not make paint . . . but Alcoa Aluminum Pigments are used in *more* aluminum paints than any other brand. Alcoa's co-operation with paint manufacturers has made possible many special formulas designed to solve your toughest problem. Aluminum paint offers the utmost in brightness and protection.

ALCOA ALUMINUM
ALUMINUM COMPANY OF AMERICA

Paint Service Bureau, Aluminum Company of America
1787-F Alcoa Building, Pittsburgh 19, Pa.

Please send me your FREE BOOKLET, *Painting with Aluminum*. I plan to paint _____

Name _____
Company _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 6680

DRAFTING . . Symbol template to speed electronic circuit layout

Source: RAPIDESIGN INCORPORATED
Box 592, Dept. IEN, Glendale, Calif.

List price is $2.50

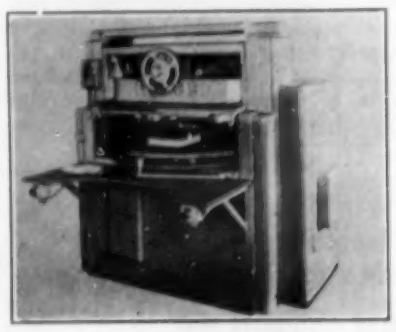
Electronic symbols, conforming to Specification JAN-STD-15, are assembled on this new No. 313 plastic template to speed electronic circuit drafting. Symbol sizes are in multiples of 0.2 in., standard to the minimum line spacing permitted under JAN-STD-15.

Straight edges, circles, corners of the template are designed to permit its use as a general unit for electronic layout in addition to its specialized application in setting up wiring diagrams. The plastic is 0.03 in. in thickness and carries a matte finish. All cutouts are milled smooth. Overall dimensions are 7 by 6⅛ inches.

If you write maker identify as IEN - 6681

PRESS . . Adjustable die machine cuts paper for envelope manufacturer

Source: HOBBS MFG. CO.
26 Salisbury St., Dept. IEN, Worcester 5, Mass.

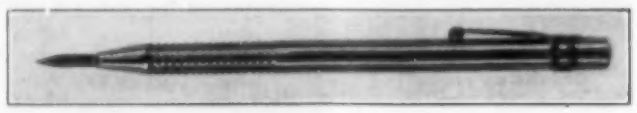


Fast change-over

Adjustable dies, mounted in the head of this new press, are positioned by turning a crank wheel at the front of the assembly to operate two screws located on the upper edge of the bed. End and side flap dimensions, for envelope blanks cut out by the machine, are determined by adjusting rear and side stops. It is unnecessary to change the dies. Included in the assembly are dual control buttons which require the operator to keep both of his hands out of the danger zone when the press is being operated.

If you write maker identify as IEN - 6682

Carbide point is mounted in a solid aluminum handle with a knurled grip, pocket clip and protecting point cover to

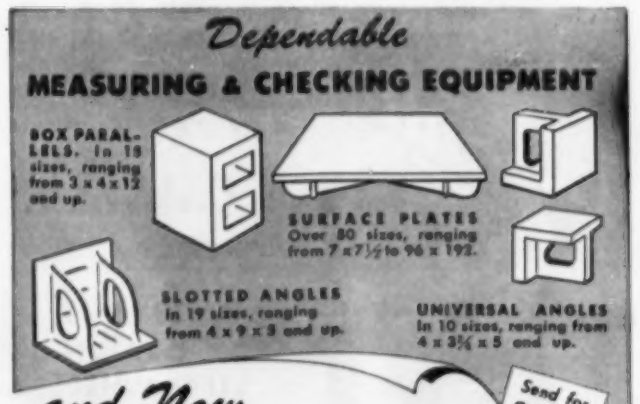


make up this new carbide scriber by Wendt-Sonis Co., Collier & Tenth Sts., Dept. IEN, Hannibal, Mo. The scriber is particularly suited for accurate layout work. List price of this new tool is $1.35.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

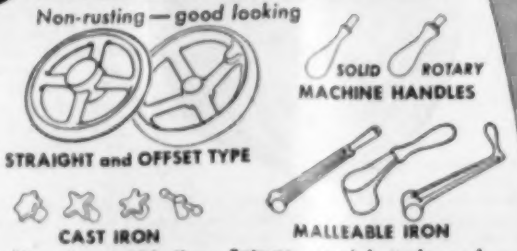
If you write maker identify as IEN - 6683

Dependable
MEASURING & CHECKING EQUIPMENT



and Now
HAND WHEELS, KNOBS, HANDLES
Cadmium Plated READY TO DELIVER
Non-rusting — good looking

Send for Complete Catalog



We also build jigs, fixtures, special tools and machinery. Send us your blueprints.

MACHINE PRODUCTS CORPORATION
6771 E. McNichols Rd. Dept. F Detroit 12, Mich.

If you write maker identify as IEN - 6684

...fast, cool-cutting is in the bag!

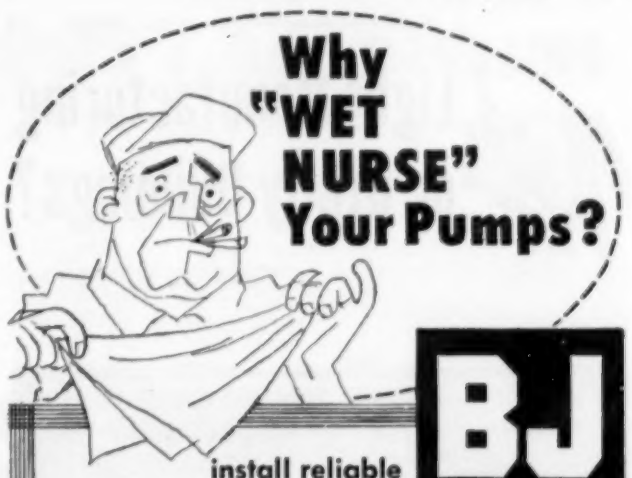
A new protective plastic bag for factory-fresh Simonds toolroom wheels every time you order. Ideal for high carbon, high chrome and other toolroom steels. Order from your Simonds distributor.

with SIMONDS ABRASIVE CO. *W Borolon* GRINDING WHEELS

SIMONDS ABRASIVE COMPANY
Philadelphia 37, Pa.
Div. of Simonds Saw and Steel Co.
DISTRIBUTORS IN PRINCIPAL CITIES
BRANCH WAREHOUSES Boston, Detroit, Chicago, Portland, San Francisco

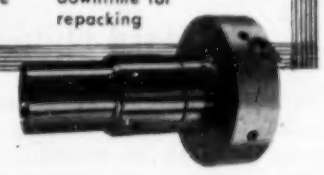
If you write maker identify as IEN - 6685

Why "WET NURSE" Your Pumps?



install reliable **BJ mechanical seals**

- Easy to install and maintain
- Protect against volatile liquid hazards
- Sizes to fit any pump
- Eliminate unnecessary downtime for repacking



Telephone your nearby BJ Pump sales office or contact:

Byron Jackson Co. *Since 1872*
P.O. Box 2017, Terminal Annex
Los Angeles 54, California

If you write maker identify as IEN - 6686

for CHEMICALLY RESISTANT **JARS, POTS CROCKS, TANKS**

Insist On U. S. CHEMICAL PORCELAIN

Jars, pots, tanks, etc. made from "U.S." Chemical Porcelain are leak-proof, mechanically strong, dense and of virtual *zero* porosity. They are completely inert to all chemicals except hydrofluoric acid and hot caustics. And porcelain contains *no iron* to be absorbed — no induced contamination! Its non-aging characteristics make for long, maintenance-free service life. No-seam construction, rounded corners and smooth lustrous white glazed surfaces provide for quick, easy cleaning.

Our complete Chemical Porcelain line of jars, pots and tanks includes a wide variety of stock items in capacities ranging from 2½ to 200 gals.

WRITE TODAY — *ask for* BULLETIN 410

U.S. STONEWARE *Process Equipment Div.*
Akron 9, Ohio 241-D

If you write maker identify as IEN - 6687

Special cold headed products

. . . nails • rivets • screws . . . made to order

. . . and to your specifications in any metal. Large raw material inventory for your convenience. Send drawing—advise quantity. *Free catalog on request.*

JOHN HASSALL INC.
P. O. Box 2169, Westbury, L. I., N. Y.

If you write maker identify as IEN - 6688

A Faster, Stronger Tie for Less Money

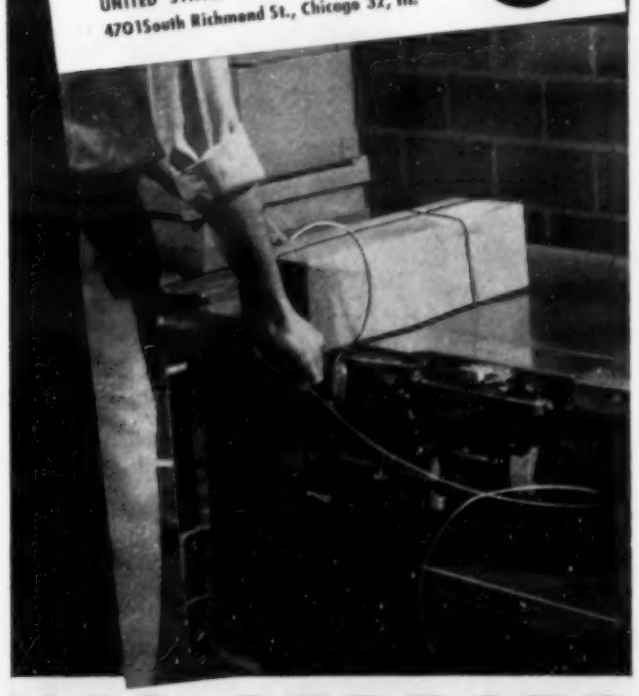
USS GERRARD STRAPPING

• We'll waste no time getting to the point. It's true. Gerrard Round Steel Strapping actually costs about 40% *less* than any other form of metal reinforcement. And it's easier to apply because it's flexible . . . conforms to any shape . . . clings snugly to the package. As for speed—the semi-automatic Model "Q" machine shown below snaps out 12 to 15 secure, pilfer-proof ties per minute.

You can realize an additional savings by making Gerrard your headquarters for steel strapping—Round *and* Flat. One source buying saves freight charges and reams of paper work.

Look into it now. A Gerrard engineer will be glad to point out to you all the specific applications and advantages of Gerrard Round and Flat Steel Strapping that will *save you money.*

GERRARD STEEL STRAPPING DIVISION
UNITED STATES STEEL CORPORATION
4701 South Richmond St., Chicago 32, Ill.

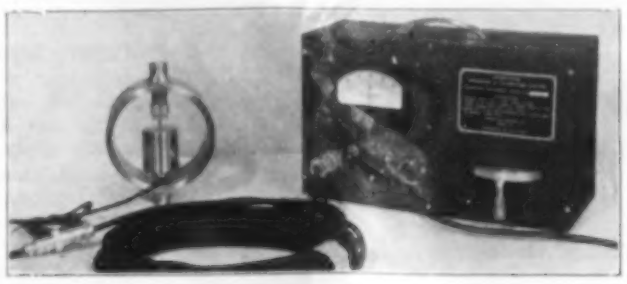


USS GERRARD
ROUND STEEL **STRAPPING** FLAT STEEL
UNITED STATES STEEL

If you write maker identify as IEN - 6690

TESTING . . Electronic instrument reads compression and tension loading

Source: MOREHOUSE MACHINE CO.
233 W. Market St., Dept. IEN, York, Pa.



Accurate to 0.1 per cent

New instrument, null-balance design, connects electrically to a load ring to which a force is applied for load measurement. The instrument itself is employed with load rings ranging from 1,000 to 300,000 lb. in compression capacity and from 2,000 to 100,000 lb. in a combination of tension and compression. In the second case the ring is primarily for compression but employs pull rods when tension is to be measured.

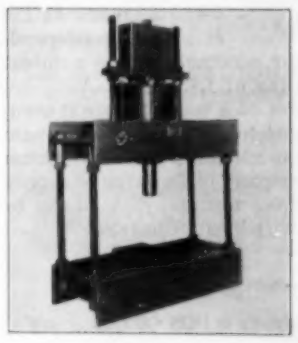
The force is applied to the load ring through its integral external bosses. The load causes the ring to deflect and the amount of deflection is transmitted electrically to the instrument. It is measured by balancing it against a known displacement signal from a micrometer mounted on the face of the housing to the lower right. When the indicator, to the upper left, shows zero as the micrometer dial is turned, the reading is taken on the dial in terms of divisions.

Actual force applied to the load ring is obtained in pounds by multiplying the number of divisions by the factor given on the calibration chart supplied with each ring. The load ring and the instrument are connected by a transmission cable that can be any length to 60 ft. or more under given conditions. Instrument operation is on 110-volt 60-cycle ac.

If you write maker identify as IEN - 6691

PRESS . . Pneumatic machine, 1½ and 6 in. stroke, to 2½ ton

Source: VAN PRODUCTS CO.
3783 W. 12th St., Dept. IEN, Erie, Pa.



Model P155

An I-beam forms the head of this new Vi-Speed bench type air operated press. Two channels are employed for the base with a steel plate acting as a bolster over a center hole that provides clearance for long shafts. Power is supplied by an 8-in. pneumatic cylinder with a control that can be set for ram pressure in any amount to 2½ ton.

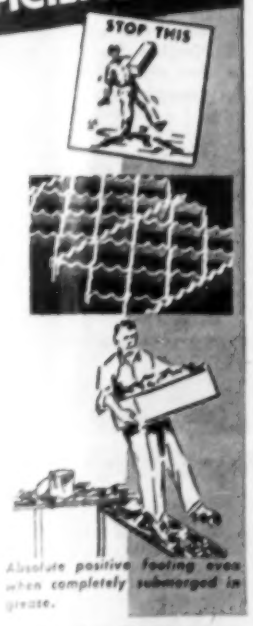
The press is hand or foot controlled. It stands 30 in. in overall height and employs 1 by 24-in. corner posts. Ram extensions are available in various lengths for adjustment of the distance between the ram and the bolster so the corner posts need not be altered in length. The line includes eight models.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6692

Compare This Positive Footing Multi-Feature "Safety Grating"

CUTS DOWN ACCIDENTS ELIMINATES DANGER SPOTS IMPROVES EFFICIENCY



Bustin
FIRM-GRIP
SAFETY GRATING

Help Yourself in your effort to eliminate skidding accidents.

Try BUSTIN FIRM-GRIP.

This recently developed unique "Safety Grating" has proven to safety engineers of major industrial concerns across the continent its unusual value in eliminating accidents.

*Pat. Pending

Absolute positive footing even when completely submerged in grease.

Bustin
Write for Complete Literature
FIRM-GRIP GRATING CORP.
Dover, New Jersey Dover 6-8800
"BUSTIN—Designers and Manufacturers of Metal Products Since 1928"

If you write maker identify as IEN - 6693

MERRILL MATERIALS HANDLING DEVICES

MERRILL BROTHERS
56-14 ARNOLD AVENUE MASPETH, N. Y.

If you write maker identify as IEN - 6694

The Spray Gun INDUSTRY PREFERS

Model P-JGA-502
$32.00
F. O. B. Toledo, Ohio

The DeVilbiss P-JGA spray gun is a high speed, large capacity, production-type gun of exceptionally compact design. Its light weight, comfortable balance and easy action minimize fatigue. Has extra-capacity to handle even the heaviest spraying requirements. Sprays any finishing material. Can be fitted with various nozzles to produce a wide variety of spray patterns for regular and special uses. Write for full details.

DEVILBISS THE DEVILBISS COMPANY
Toledo, Ohio
Santa Clara, Calif. • Barrie, Ontario • London, England

If you write maker identify as IEN - 6695

IT SAVED THE DAY FOR THIS P. A. HIS S. O. S. BROUGHT F. O. S.®†

You tape it best with F. O. S. Industrial Tape . . . product of
THE SEAMLESS RUBBER COMPANY
NEW HAVEN 3, CONN., U.S.A.
Write for samples, literature, prices †Friction One Side

If you write maker identify as IEN - 6696

Keep your air lines clean

CUT MAINTENANCE WITH WILKERSON *Automatic* MOISTURE SEPARATORS

Protect your compressed air system and tools. Automatically blast out water and sludge with practically no pressure drop. No manual draining . . . no lost production . . . labor saving.

Guaranteed full capacity* for the size lines they serve. Designed for high efficiency in forcing condensation. Units for every popular size from ¼" to 2", low or high pressure. Other efficient Wilkerson models for tanks, compressors, sumps, aftercoolers, etc.

Manual drains also available. Write for literature on your company letterhead.

*Separator-chamber volume and shape are important, with direct ratio to line capacity. No ⅜" unit made serves a ½" line adequately.

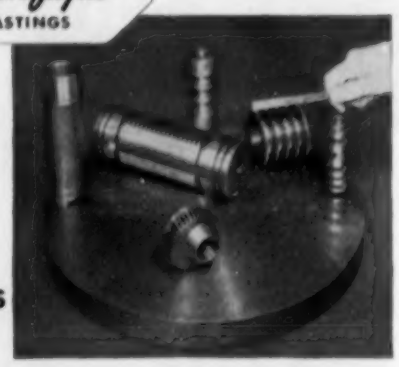
WILKERSON CORPORATION

3469 S. PLATTE RIVER DRIVE ENGLEWOOD, COLORADO

SERVICE-DISTRIBUTORS IN MOST U.S. CITIES

If you write maker identify as IEN - 6697

SHENANGO *Centrifugal* CASTINGS



Examples of finished tool parts machined from Shenango Meehanite Metal bar stock.

For superior quality parts specify

SHENANGO BAR STOCK!

THESE complex and varied machine tool parts were made from Shenango Meehanite Metal bar stock, recognized for close grain, pressure tightness, uniform hardness and exceptional wear resistance.

In addition, the uniformity of Meehanite Metal permits machining at increased speeds. It takes a fine, smooth finish in any cutting, honing, or grinding operation. Can be heat-treated too. When you specify Meehanite Metal bar stock you receive longer wear, minimum machining loss and freedom from defects.

These and other outstanding Shenango features add up to maximum versatility, minimum rejection, and the cost-cutting solution to many design and maintenance problems.

Write today for Bulletin 152. Address . . .

SHENANGO-PENN MOLD COMPANY
Centrifugal Castings Division
Dover, Ohio
Executive Offices: Pittsburgh, Pa.

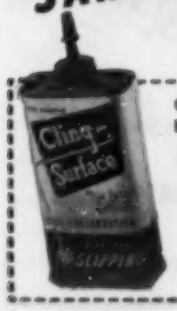
SHENANGO

COPPER, TIN, LEAD, ZINC BRONZES · MONEL METAL
ALUMINUM AND MANGANESE BRONZES · NI-RESIST · MEEHANITE METAL

If you write maker identify as IEN - 6698

FREE SAMPLE

- Makes and keeps belts soft and pliable
- *Pliable* belt "clings" to "surface" of pulley
- Dissolves hard "glaze" that makes belts slip
- *Only* belt preservative that has met and passed U. S. Government Tests and Requirements
- Sold with money-back guarantee since 1896



CLING-SURFACE CO., 1044 Niagara St., Buffalo, N. Y.
In Canada: Write CLING-SURFACE CO., Toronto 2, Ont.

Please send me FREE sample can of Cling-Surface "50" Belt Preservative

Name .....
Title .....
Company .....
City ..... State .....

If you write maker identify as IEN - 6699

TESTING . . Electronic instrument delivers continuously adjustable pulse

Source: GENERAL RADIO CO.
275 Mass. Ave., Dept. IEN, Cambridge 39, Mass.

Details on request

Unit Pulser, Type 1217-A, is a new instrument, for use with a Type 1203-A Unit Power Supply, to deliver a continuously adjustable pulse with duration from 0.2 to 60,000 microseconds. A self-contained oscillator drives the output at 12 fixed frequencies from 30 cycles to 100 kilocycles. Provision is made for external triggering at any frequency below the maximum.

Pulse "rise" time is within 0.05 and "fall" time is about 0.15 microsecond. Open circuit output is at 20 volts for pulses of either polarity. Internal output impedance is about 200 ohms for positive and 1,500 ohms for negative pulses. The instrument will approximate three basic pulse source waveforms including impulse, step function, periodic repeat of adjustable duration. List price is $195 for the Unit Pulser. The Unit Power Supply adds $40.

If you write maker identify as IEN - 6700

CUTTING . . Rotary head machine to measure and cut non-metallic tape

Source: ARTOS ENGINEERING CO.
2757 S. 28th St., Dept. IEN, Milwaukee 46, Wis.

Takes type from reel

Type GM designates new design of the company's previously developed machine to measure and cut ribbon, tape and webbing in lengths from 2 to 160 inches. The machine will handle tape to 3 in. in width and will make as many as 120 cuts per min., depending upon the cut length. A counter accumulates the number. Drive is by a ¼-hp. motor operating at 1,750 rpm.

The machine is designed to mount on a bench where it occupies 17 by 24 inches. It is available to cut at a 30-deg. angle as well as square. The angle, or bias machine, has a maximum cutting width of 1⅛ inches. The company is prepared to supply a special adaptation of the machine to cut nylon ribbon to length and seal the ribbon ends with heated knives.

If you write maker identify as IEN - 6701

A layer of glass fiber insulation has been employed by Aluminum Co. of America, 1501 Alcoa Bldg., Dept. IEN, Pittsburgh 19, Pa., between two corrugated aluminum sheets in construction of its new heavy press plant. The assembly of 1-in. glass fiber and the aluminum sheets produces a curtain wall with insulation value equivalent to 12 in. of masonry. The wall is built on the job.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6702

110 Million Run!

WITH THE *SAME* DICKERMAN FEEDS!

Here are amazing, actual production facts on feeding stock for army rifle clips!

EQUIPMENT:
3 - 105 Ton Ferracute Presses
3 - Dickerman Die Feeds

SPEED:
80 to 85 pieces per minute

PRESS TIME:
Over a year on 3 shifts — 24 hours per day

PRODUCTION:
90,000 pieces per feed, per day 110,000,000 pieces produced to date — with feeds still operating in accurate, serviceable condition!

Die ribbon from one of three 10 station progressive dies. Extreme proving ground accuracy is vital on every press stroke.

These are not claims, they're actual, cold — dollars and cents production facts. On your next punch press job, if production is a factor — if parts cost is a factor — if press speed is a factor — You can't afford not to use a Dickerman Feed!

SEND TODAY for literature and CATALOGS on the complete, dependable line of DICKERMAN FEEDS.

Dickerman

H. E. DICKERMAN MFG. CO.
324 - 321 ALBANY STREET • SPRINGFIELD, MASS.

If you write maker identify as IEN - 6703

FREE *Send for your copy today*

Helps you choose the RIGHT Hood Glove — *Neoprene, Rubber or Plastic* for ANY Industrial job

Check this Reliable, Handy Hood Performance Chart!

. . . this information-packed booklet shows comparative wear and chemical resistance of Hood Neoprene, Rubber and Plastic Coated Gloves, and contains illustrations and full descriptions of the complete line of Hood Industrial Gloves — top choice for *every* job in *any* industry.

HOOD RUBBER CO.
Watertown, Mass.

If you write maker identify as IEN - 6704

AJUSTRITE

TRADE MARK

AUTOMATIC ADJUSTABLE CHAIRS and STOOLS

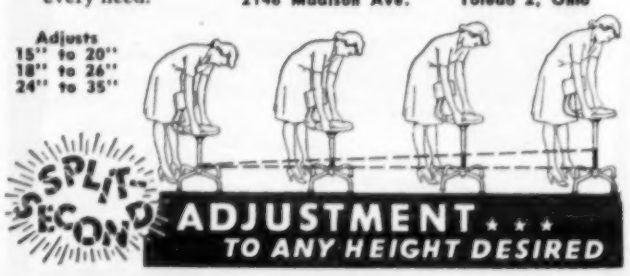
RSC Models

Size and style to fit every need.

Tops in factory, laboratory and school seating. Many leading industries have standardized on Ajustrite. Saves confusion among employees and eliminates maintenance. Has many advantages, high quality, no other like it. Try it in your shop for *30 days.* Full information on request.

TSS Model

AJUSTO EQUIPMENT COMPANY
2146 Madison Ave. Toledo 2, Ohio



If you write maker identify as IEN - 6705

NOW ONE CHECK VALVE for all requirements

This DURABLA BASIC CHECK Unit, added to any standard fitting (such as the reducing coupling shown here) gives you a complete valve *suitable for ANY* service. Because DURABLA Check Valves will operate in any position, they can be installed without changing existing lines. Made of stainless steel (or a combination of stainless steel and Ni-resist), they will handle practically any liquid, gas or air — at all temperatures and pressures.

Available in seven standard line sizes, from 3/8" to 2". Write for complete information.

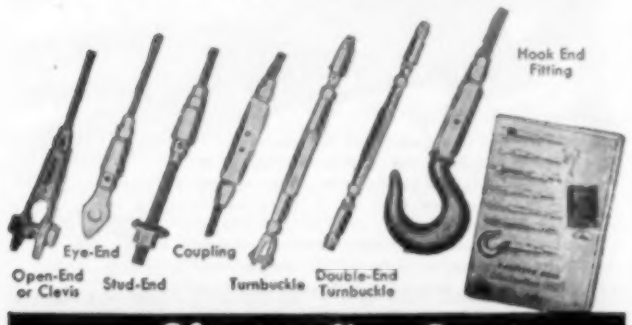
DURABLA MANUFACTURING COMPANY
114 Liberty Street, New York 6, N. Y.
DM-10

If you write maker identify as **IEN - 6706**

Cut out needless re-roping costs

USE ELECTROLINE WIRE ROPE FITTINGS

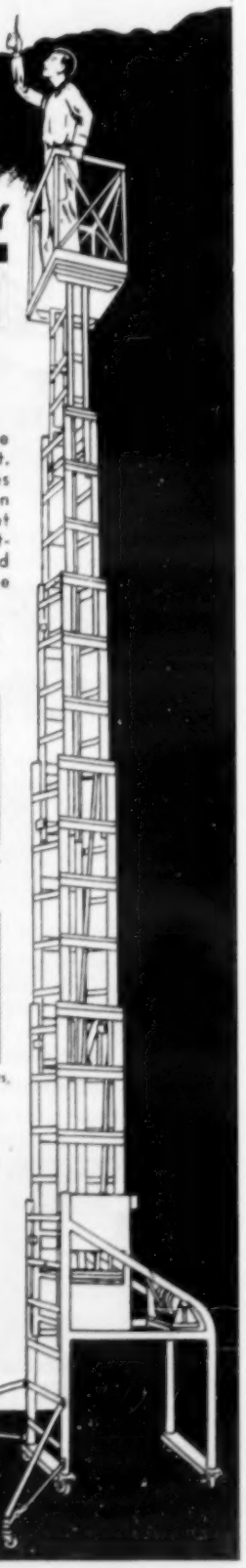
In minutes, ordinary labor can install Electroline fittings that will hang on for all time. Prolong wire rope life by damping vibration stresses thus eliminating wire rope fatigue at the fitting. Write for Electroline Catalog. It points out many savings—no cost.



Electroline Company
4121 SOUTH LA SALLE STREET
CHICAGO 9, ILLINOIS
IN CANADA: POWERLITE DEVICES, LTD., TORONTO

If you write maker identify as **IEN - 6707**

UP! UP! UP! TO ANY DESIRED HEIGHT

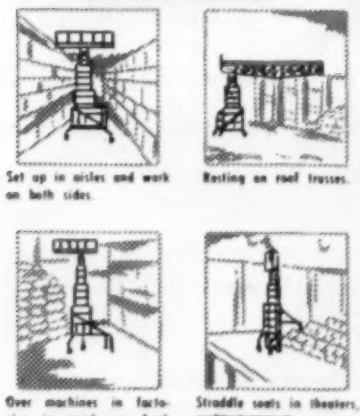


EASILY... SAFELY... ECONOMICALLY

HI-LIFT
EXTENSION
SCAFFOLD

Models extend from 6 ft. 10 in. (can be made lower) to any desired height. Hand or electrically operated. Comes to you ready for work — no erection required, no loose parts. Built to meet individual requirements. Ideal for painting, lighting, cleaning, and all overhead maintenance. Pays for itself in time and labor saving.

MOST VERSATILE SCAFFOLD ON THE MARKET


Set up in aisles and work on both sides.
Resting on roof trusses.
Over machines in factories, in warehouses, bank cages, etc.
Straddle seats in theaters, auditoriums, etc.

Write for Complete Literature

ATLAS INDUSTRIAL CORP.
847 39th Street
Brooklyn 32, N. Y.

If you write maker identify as **IEN - 6709**

VALVE . . Ball design assembles test indicator on an engine

Source: BACHARACH INDUSTRIAL INSTRUMENT CO.
7301 Penn Ave., Dept. IEN, Pittsburgh 8, Pa.

For engine test

The ball in this new valve is forced into a conical seat by combustion chamber pressure, when the valve is mounted on an internal combustion engine and is in closed position. At the same time the valve stem can be backed away so it is shielded from direct flame from the chamber. Moving the stem inward, by turning the handwheel, forces the ball from the seat, opens the valve to an indicator threaded into it to make a test pressure diagram on engine performance.

The valve is suited also for use in gas compressors where accidental opening might result in hazardous conditions due to escape of combustible gases. Internal parts can be replaced through the stem opening so the valve need not be removed from an engine or compressor for maintenance.

If you write maker identify as **IEN - 6710**

PLASTIC . . Phenolic compound molds in thin sections around inserts

Source: DUREZ PLASTICS & CHEMICALS INC.
6 Walck Road, Dept. IEN, North Tonawanda, N. Y.

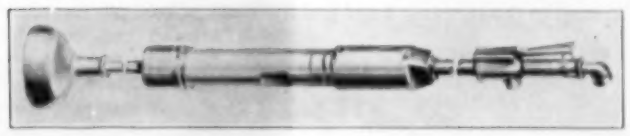
Technical data upon request

Durez 16840 Black is a new nitrile rubber-bearing wood-flour-filled phenolic molding compound. It can be employed in compression or plunger molding equipment. Molding temperature is about 320 deg. F. Chromium plated molds are recommended for best surface finish. Molded parts are capable of withstanding repeated abuse without failure. Packaging is in 300-lb. quantities. List price is 36½ cents per pound in truck and carload lots.

If you write maker identify as **IEN - 6711**

CONSTRUCTION . . Pneumatic tamper to compact ground when backfilling

Source: WORTHINGTON CORPORATION
423 Worthington Ave., Dept. IEN, Harrison, N. J.



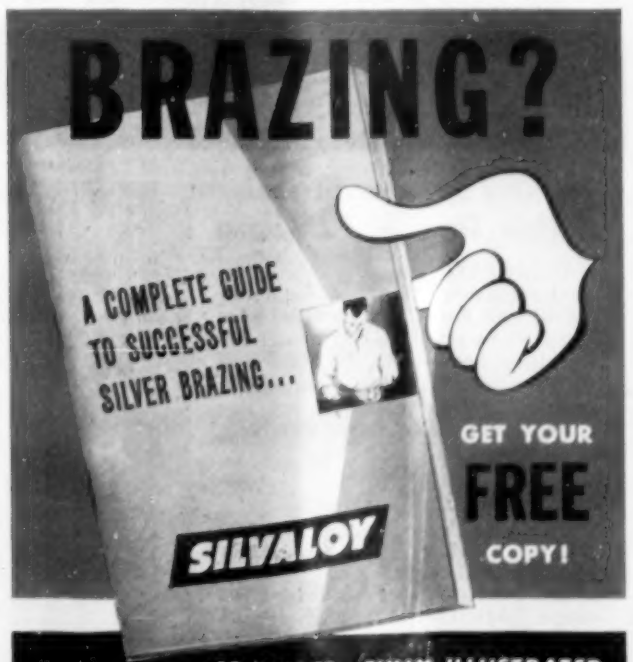
Illustrated Bulletin 1224-B1

Type W-18 is a new medium weight tamper in the company's line of Blue Brute construction tools. It is characterized by easy handling and good "walking" ability. The unit is available with a standard 6-in. butt for use as a single assembly or it can be ordered as the Type WT-18 triplex tamper in which three of the units are assembled together to provide 85 sq. in. of effective compaction area. Shipping weight of the single tool is 42 lb. and of the triplex tool is 205 pounds.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6712**

BRAZING?



48 PAGES – FULLY ILLUSTRATED

Get this compact library of brazing data that every design and production engineer—every brazing technician and buyer of brazing materials should have! It is the most complete guide available. Send for your free copy today.

THE AMERICAN PLATINUM WORKS
231 New Jersey Railroad Avenue • Newark 5, N. J.

If you write maker identify as **IEN - 6713**

MEET THE CHAMP!

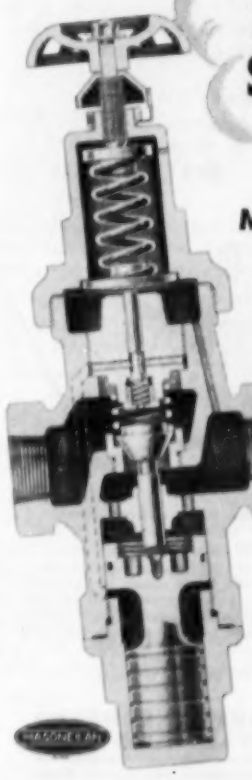
UNIVERSAL DRILL BUSHINGS BEAT ALL RECORDS FOR LONG LIFE AND ACCURACY

179-A

UNIVERSAL ENGINEERING COMPANY
FRANKENMUTH 6, MICHIGAN

If you write maker identify as **IEN - 6714**

FOR SENSITIVE Steam Control



MASONEILAN No. 11
Pressure Reducing Valve

Experience proves this is the most accurate, dependable steam reducing valve in its class. Responds instantly to smallest variations. Superfinished stainless steel vital parts prevent sticking or corrosion. Users report maintenance consists of *little more than keeping the moving parts clean.* All parts may be removed with valve in the line. Initial pressures up to 250 lbs., reduce pressures 10-90 or 75 to 225 lbs. Sizes ½" to 2" with bronze body. (Also available in iron and steel.)

Call your local Mason-Neilan Industrial Distributor for fast, dependable service.

MASON-NEILAN REGULATOR CO.
1128 Adams St., Boston 24, Mass.

If you write maker identify as **IEN - 6715**

ALGRIP FLOORING STOPS ACCIDENTS— PAYS FOR ITSELF IN INSURANCE SAVINGS

If plant accidents are hiking your costs and cutting production, end both with ALGRIP Abrasive Rolled Steel Floor Plate. For ALGRIP *stays* non-slip even on steep inclines—actually pays for itself in savings on insurance premiums.

Hundreds of tiny abrasive particles impregnated *to a controlled depth of penetration* into tough, lightweight steel plate give each square foot of ALGRIP a "grinding-wheel" grain surface that can't wear out because hard use only exposes new gripping particles . . . an exclusive ALGRIP feature.

Investigate ALGRIP now and begin cutting costs. Send today for full details. There's no obligation.

A.W. ALGRIP *Abrasive Rolled Steel Floor Plate.*

ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.

Please send free booklet AL-3 on savings from safety with ALGRIP.

Name _____
Company _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 6716

TROUBLE MAKER!

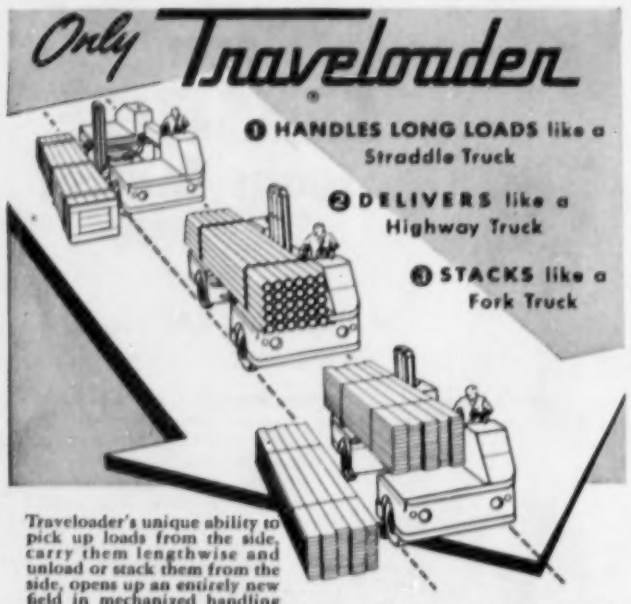
Tiny dust particles can cause trouble out of all proportion to their size . . . they create hazardous fire and explosion conditions; they clog and cause excessive wear to valuable machinery; they create unfavorable working conditions and often render the best laid community relations campaigns ineffective.

Effective dust control can eliminate all of these troublesome conditions. To get the facts on how you can determine the scope of your dust problem and the most efficient equipment for effective control, write for our new manual, "A Simplified Test Method for Dust Control Determination."

For your copy, just clip this ad to your company letterhead and sign your name and title.

dustex CORP.
1764 Walden Avenue
Buffalo 25, N. Y.

If you write maker identify as IEN - 6717



Traveloader's unique ability to pick up loads from the side, carry them lengthwise and unload or stack them from the side, opens up an entirely new field in mechanized handling of long, unwieldy or bulky loads. Thus this one machine, operated by one man, often replaces two or three handling units now used on such jobs. The cost savings are obvious.

It offers many other advantages. Weight is distributed equally over four wheels, permitting heavy load handling on floors or ground conditions not practical for other devices. It can stack up to 12 ft. from 10 ft. aisles. It can handle palletized or unpalletized loads with forks, or loads in a sling with a crane attachment. It delivers loads at speeds up to 30 MPH.

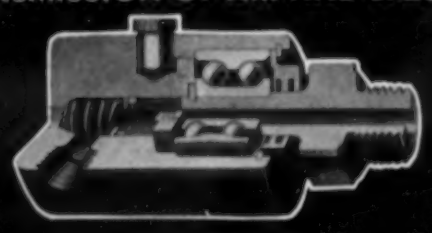
Write for descriptive bulletin 1360.

Baker industrial trucks

THE BAKER-RAULANG COMPANY
1226 W. 80th STREET • CLEVELAND 2, OHIO
BAKER-LULL Corp., *Subsidiary*, Minneapolis, Minn.
Material Handling and Construction Equipment

If you write maker identify as IEN - 6718

FAWICK ROTORSEAL
PROVIDES TROUBLE-FREE TRANSMISSION OF AIR AND LIQUIDS



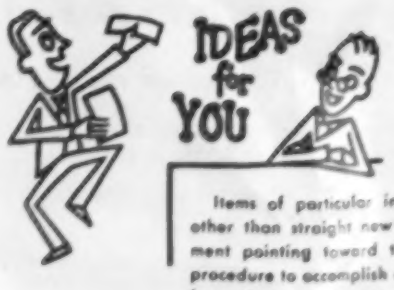
If your machine problem requires the transmission of air or liquids from stationary to rotating machine members, a FAWICK ROTORSEAL will provide the trouble-free, practical answer.

Precision-made ROTORSEALS are available in either single or multiple passage units, producing an absolute sealing of air, liquids, or gases under pressure. They are equally effective in vacuum applications. Thousands of installations have proved the high efficiency of FAWICK ROTORSEALS.

FAWICK AIRFLEX DIVISION
FEDERAL FAWICK CORPORATION
9919 CLINTON ROAD
CLEVELAND 11, OHIO

Write for ROTORSEAL Bulletin ML-6.

FAWICK Airflex
INDUSTRIAL CLUTCHES AND BRAKES



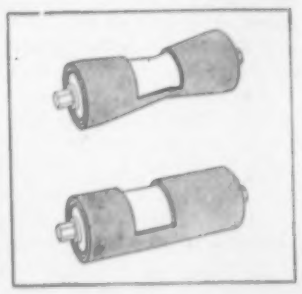
Items of particular interest in the news other than straight new products, development pointing toward the future, unusual procedure to accomplish a point, suggestions for action, each to provide ideas for you.

If you write maker identify as IEN - 6719

Hold these new Findzit "divining rods" parallel to the ground while you walk slowly toward the location where you

believe a pipe is buried. The rods will begin to swing apart as you move directly over the pipe. They will swing completely apart at the exact location. Now you back up, after you have brought the rods back together, until they swing apart again and you mark this point. The distance between the first and second points is the depth at which the pipe is buried. Filtration Equipment Corp., Box 1331, Dept. IEN, Rochester 3, N. Y., will supply a pair of the rods in a tube carrying case for about $6.

If you write maker identify as IEN - 6720



Concave, straight, tapered conveyor rolls, and conveyor wheels, are now available with Neoplastic coating from Logan Company, 276 Cabel St., Dept. IEN, Louisville 6, Ky. The coating provides a cushioning effect to absorb shock and to prevent marring products with finished surfaces. The company can supply coated parts to specification or can coat work sent to it.

If you write maker identify as IEN - 6721

Patented welded terminals, in which the resistance wire is welded to the terminal band and the band is held permanently around the core by means of welding, are now available on all of the company's wire wound resistors. Soldering, brazing and mechanical fastenings have been eliminated. The permanent connections are not affected by vibration or high temperatures and a stable electrical connection is assured. The resistance wire is welded flush to the terminal band so the connection is covered by the final vitreous enamel coating. Ohmite Mfg. Co., 3601 Howard St., Dept. IEN, Skokie, Ill., makes it.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6722

BALLIZING

For NEW Speed and Economy in Hole Sizing and Finishing

BALLIZING is a precision high-production process for sizing and finishing die-cast, drawn, and machined holes — simply by pressing a ball through the unfinished hole. With alloy steel and tungsten carbide balls available in practical quantities and in any size required, this process is used with holes of all diameters.

MAJOR ADVANTAGES:

FAST; takes only seconds. ACCURATE. FINE FINISH — burnished smooth. ECONOMICAL. Uses unskilled labor. No tool sharpening. No close adjustments. No special equipment.

FREE BALLIZING BULLETIN gives details; shows typical applications. May we send you a copy?

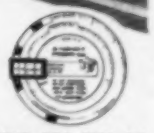
INDUSTRIAL TECTONICS, Inc. ANN ARBOR 2, MICH.

ITI PRECISION BALLS
All Materials — All Sizes
In Large or Small Quantities

If you write maker identify as IEN - 6723

AMP SOLISTRAND TERMINALS
NOW UP TO 600,000 CIRCULAR MILS!

AMP "SOLISTRAND" terminals, strongest and best of all non-insulated solderless connectors, are now available in wire ranges up to 600,000 circular mils! Wire is formed into one homogeneous mass by a deep pressure crimp. Use on either solid, stranded, or irregular shaped wires or combinations of each. Crimp with AMP's light weight hand hydraulic tool or AMP's new DYNA-CRIMP pneumatic-hydraulic power tool.



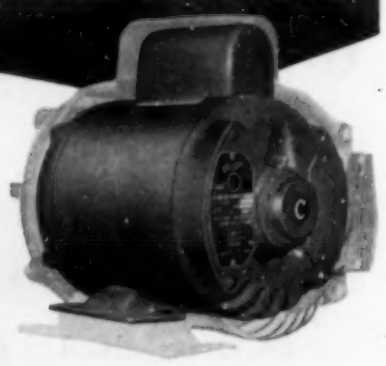
SEND FOR FREE CIRCULAR MIL AREA CHART—

AMP
AMP Trade-Mark Reg. U. S. Pat. Off. ©1954 AMP

AIRCRAFT-MARINE PRODUCTS, INC.
POWER TERMINAL DIVISION
2100 Paxton Street, Harrisburg, Penna.

If you write maker identify as IEN - 6724

MORE POWER IN SMALLER FRAMES



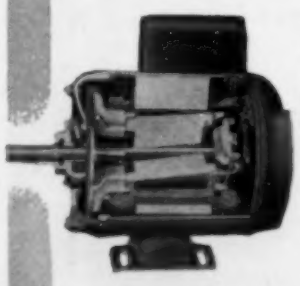
Saves Space
Weighs Less...

NEW Century

Form "F" Fractional H.P. Motors
Now available in 1/8 to 3/4 H.P.

Thanks to new techniques developed in the last several years, this *smaller* power package combines improved performance with even greater Century dependability.

1. More uniform silicon laminated steel in magnetic cores.
2. Improved plastic insulated wire in coils.
3. New, extremely tough, plastic slot insulation.
4. More effective thermal setting plastic varnish insulation on windings.
5. Improved high-pressure die-cast aluminum rotors. Individually dynamically balanced.
6. Better ventilation.
7. These new Century Motors incorporate all mechanical features proved effective in thousands of varying applications.



For full details on Century Fractional H.P. Motors—write for bulletin 1-5 Page 1. Century also offers a wide range of types and sizes in AC and DC . . . 1/8 to 400 H.P.

832A

CENTURY ELECTRIC CO.
1806 Pine Street
St. Louis 3, Missouri

Offices and Stock Points in Principal Cities

Century C MOTORS

If you write maker identify as IEN - 6726

Tasgon is your quickest, most penetrating rust solvent! Cuts through rust, gummed up oil and grease, hardened paint . . . loosens rusty or frozen nuts, bolts, couplings, fittings, any metal connections. Saves time, labor, and broken parts.

Tasgon comes in convenient 3 oz. cans for mechanics tool kits and in pints, quarts and gallons for shop and field use.

Write Today for a free sample can of Tasgon.

Samuel Cabot Inc.
633 Oliver Bldg., Boston 9, Mass.

If you write maker identify as IEN - 6727

Whatever your material handling job may be, Phillips Equipment is designed to do it more efficiently . . . with longer service and a minimum of maintenance. Write for bulletins listed below.

PHILLIPS
MINE AND MILL SUPPLY COMPANY
2300 JANE STREET
PITTSBURGH 3, PA.

Manufacturers for 90 Years

IDEAS for YOU —*Continued*

If you write maker identify as IEN - 6729

Poly-Seal trade names a new plastic closure employing a polyethylene liner that gradually takes the shape of the

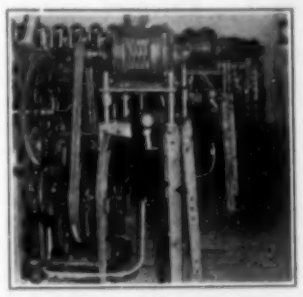
container on which the closure is applied. The new design can be applied and removed with a slight spin action to engage or release its screw threads. Sizes are available from 15 mm. up, in a range of designs and colors, from Poly-Seal Corp., 405 Lexington Ave., Dept. IEN, New York 17, N. Y.

If you write maker identify as IEN - 6730

Dixon Corp., 10 High St., Dept. IEN, Bristol, R. I., has assembled a sample kit containing approximately a pound of pieces made up of the materials Rulon and teflon. The kit is intended for designers and engineers who wish to test the characteristics of these two plastic materials, particularly in bearings in which lubrication cannot be applied and in instances where chemically inert qualities and electrical resistance are required factors. The kit contains about 4 in. of Rulon rod and a machined piece of the same material, an extruded teflon rod, a bit of extruded tubing and small teflon molded and machined samples.

If you write maker identify as IEN - 6731

Vertical adjustment, to 6 in., is provided by this new LVM motor base. It is particularly suited for installations where driving wheels are changed in connection with endless belts or chains. Vertical motion is sufficient for use with the spring loaded type of variable speed motor sheave. Construction is in steel. The base shown takes a 3 to 7½-hp. motor in Frame 284. Other sizes are available to order from the manufacturer, Quintin James Kearney, 220 Congress Ave., Dept. IEN, Lansdowne, Pa.



If you write maker identify as IEN - 6732

This new window was designed by **Mosler Safe Co.**, 320 Fifth Ave., Dept. IEN, New York 1, N. Y., so a pedestrian can walk up to it from an outdoor sidewalk and do business with a bank teller on the inside. The window is suited also for plant gate houses to assist in passing workers in and out quickly, efficiently and safely, the latter primarily from the standpoint of the guard.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6733

ROBINSON
METERING PUMPS

FORCIBLY EJECT EXACT METERED AMOUNTS OF:

ASPHALT • RESIN • PITCH • ROSIN ADHESIVES • STEARIC ACID and PLASTER OF PARIS • PORTLAND CEMENT AND VARNISH MIXTURE • SEALING COMPOUND • POLYAMIDE • PLASTISOL PASTES • GLYPTAL MIXTURES • RUBBER BAKELITE

Melt and meter materials that are solid at normal temperatures. Easy ejection through tiny apertures.

Any of 20 discharge quantity settings can be changed in 2 seconds (one model has 50 settings) without tools.

Eject accurately .04cc to 370cc in 2/3 second.

Thermostatic heat from 70° to 500° F . . . Viscosities from #10 S.A.E. oil to 200,000 centipoises.

Unskilled operators quickly learn to do neat, clean work.

The versatile Robinson Metering **Pumps may be the economical solution to one of your production problems. Write for free folder.**

EDWARD E. ROBINSON
INCORPORATED
P.O. Box
95 PARK AVE. • NUTLEY 10, NEW JERSEY
Telephone

If you write maker identify as IEN - 6734

FREE! Authoritative, idea-filled bulletin tells you all about metal bellows and bellows assemblies

Contains bellows construction data...Illustrations... Diagrams...Applications...Temperature conversion table . . . Altitude-pressure-temperature table. Useful in helping to solve design problems on temperature or pressure control with bellows assemblies. Write today for your free copy. Address Dept. LN-1400.

Robertshaw-Fulton
CONTROLS COMPANY
FULTON SYLPHON DIVISION • KNOXVILLE 1, TENN.

If you write maker identify as IEN - 6735

"ALL THIS AND . . .

Not only does this new 6" Dial Indicator have a number of new design features, but it can be used for all these process variables:

On Temperature—mercury, vapor, gas or organic liquid actuation, whichever gives the ideal characteristics for your particular problem. Ranges from minus 125°F to +1200°F.

On Pressure—range spans from 12 psi to 20,000 psi are available using Bourdon springs or C springs of appropriate metals for required service.

On Load—standard tension and compression load elements are incorporated to use a new mercury Bourdon spring.

New Movement Design minimizes linkage error, means more dependable accuracy throughout the range span.

Fume and moisture proof case may be face or flush mounted, panel or field.

Electric alarm mechanisms, easily and quickly adjusted—optional.

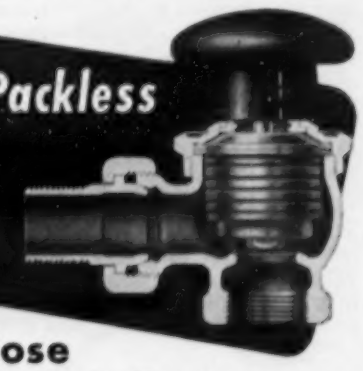
Ask your Taylor Field Engineer, or write for **Bulletin 98214.** Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

Instruments for indicating, recording and controlling temperature, pressure, flow, liquid level, speed, density, load and humidity.

TAYLOR INSTRUMENTS MEAN ACCURACY FIRST

If you write maker identify as IEN - 6736

Dunham Packless Radiator Valves



Open and Close in Less Than One Turn

You can fully open and close dial-equipped Dunham Packless Valves—in *less than one complete turn.* And the handle always turns easily, too.

That's because these valves are *truly packless* without springs, packing, or stuffing boxes. Steam, water or dirt can't come in contact with the valve spindle. As a result, the valve handle always turns freely.

Dunham No. 1140 Packless Valves come in 4 body patterns, 5 sizes from ½-in. to 1½-in.

For complete information about Dunham Specialties, WRITE FOR BULLETIN IEN-6.

DUNHAM
HEATING SYSTEMS AND EQUIPMENT
Quality First for Fifty Years
C. A. DUNHAM COMPANY, 400 W. Madison St., Chicago 6, Illinois

If you write maker identify as **IEN - 6737**

Handles any job requiring a baked finish

Despatch FINISH BAKING OVENS

Write for the Despatch RS Bulletin

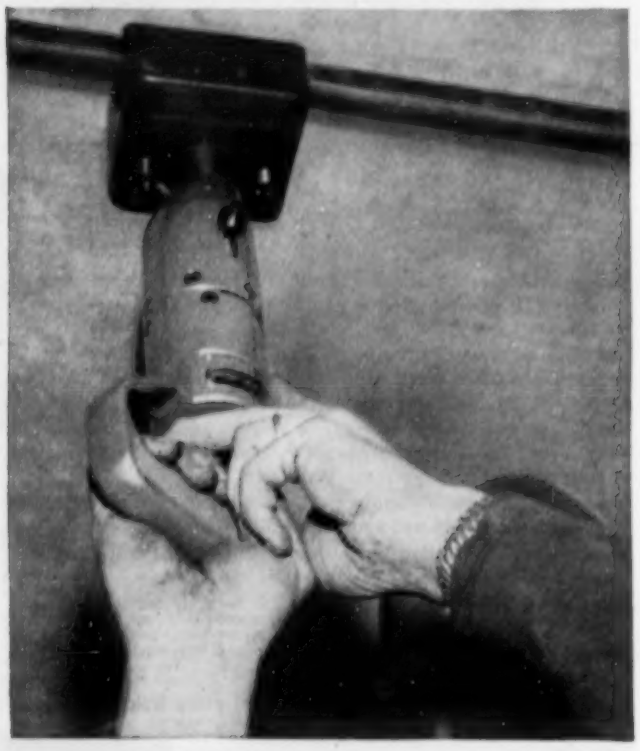
All industrial painters are enthusiastic about the Despatch *RS-4 or 5* Finish Baking Ovens. In this particular operation at Minneapolis-Honeywell Regulator Co. it is being used for baking finishes on relay cases. They like the accurate temperature control, ease of loading and temperature uniformity within their oven. They figure that this RS Oven, installed in 1946, paid for itself years ago through the saving in baking time and labor. Have you a need for controlled, uniform heat up to 500°?

DESPATCH Established OVEN CO. in 1902

Manufacturers of ovens for: Paint Finishing . . . Dehydrating . . . Curing . . . Industrial and Lab. Applications.

337 Despatch Bldg., Minneapolis 14, Minn.

If you write maker identify as **IEN - 6738**



Save Up to 80% on Fastening Costs with the REMINGTON STUD DRIVER

"Cuts my conduit anchoring cost by an average of 74%" —writes one electrician about his Remington Stud Driver, and it's a typical report. With a speed of up to 5 studs per minute, this powder-actuated tool is bringing new economy to the job . . . new opportunities for low cost replacement of obsolete wiring systems.

Many maintenance men are finding they can speed up installations, get more jobs done with the Remington Stud Driver. Others tell us that the tool's light weight—6 lbs.—makes overhead work a lot easier. All are agreed that you can't beat it for setting studs in concrete and steel.

What's your fastening job? Whether you're fastening eye bolts for stringing wires or conduit clips to concrete, you'll save money with the Remington Stud Driver. For further information on how this amazing tool can help solve your fastening problems, mail the coupon below.

"If It's Remington—It's Right!"

Remington DU PONT

Listed & Approved by Underwriters' Laboratories, Inc.

MAIL THIS COUPON TODAY

Industrial Sales Division, Dept. I.E.N.-6
Remington Arms Company, Inc.
Bridgeport 2, Connecticut

Please send me a *free* copy of the new booklet showing how I can cut my fastening costs.

Name _____

Position _____

Firm _____

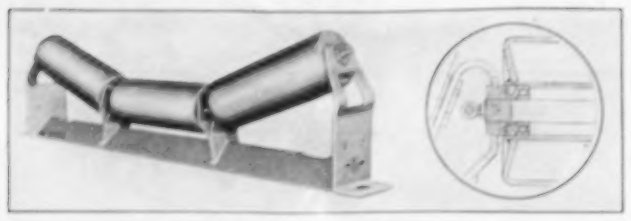
Address _____

City _____ *State* _____

If you write maker identify as **IEN - 6740**

CONVEYING . . Belt carrier with spun end rolls on ball bearings

Source: STEPHENS-ADAMSON MFG. CO.
231 Ridgeway Ave., Dept. IEN, Aurora, Ill.



Illustrated data in Bulletin 554

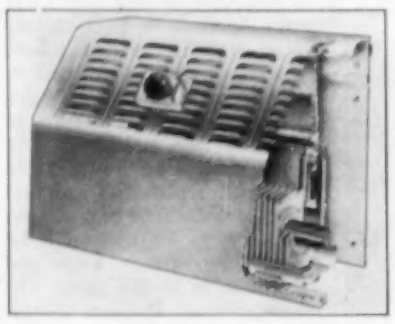
Type SP-745 is a new assembly of pressed steel base, welded support brackets and spun and steel belt conveyor rolls mounted on ball bearings. The bearings are grease lubricated through fittings at one or both sides of each assembly. Die cast labyrinth seals prevent leakage. Sufficient grease is contained in the bearing chamber and passages to operate the rolls for long periods of time without need for further attention in service.

The rolls measure 4 in. in diameter. The assembly is available from stock for four belt widths between 18 and 36 inches. Rolls are interchangeable and can be inserted or removed from their brackets without tools.

If you write maker identify as **IEN - 6741**

HEATING . . Finned radiator applies at base of a wall in a room

Source: KRITZER RADIANT COILS INC.
2901 Lawrence Ave., Dept. IEN, Chicago 25, Ill.



No holes to drill

Patented damper and control, adjustable coil support bracket and slide cradle, feature the construction of this new radiant base board space heating assembly. The damper is suspended from the base board frame. The damper control operates from any point in the base board run. The coil support bracket includes the bracket itself, an adjustable stirrup and a sliding cradle. The finned heating coil fits into the cradle which rides on the stirrup to permit quiet expansion and contraction. The assembly is made of steel with a louvered front. It is supplied with a corrosion resistant finish that will take any finishing paint.

If you write maker identify as **IEN - 6742**

Number 706 is a new open weave tack cloth to pick up dirt and dust particles from surfaces that are to be painted. The cloth holds the particles and other foreign matter so they cannot spread around. It measures 18 by 36 in. and is folded into a pad size and sealed in a clear plastic reusable box. Manufacturer is Associated Producers Inc., 1019 E. 8-Mile Road, Dept. IEN, Hazel Park, Mich.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6743**

PICKS UP DIRT, CHIPS, LIQUIDS, CUTTING OILS

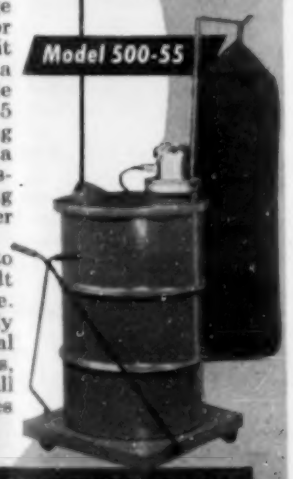
• Easily
• Quickly
• Thoroughly

at less cost than ever before. The American Model No. 500-55 picks up 50 to 100% faster due to a new exclusive air handling feature that produces more power than any vacuum of the same motor rating.

Ideal for flood control, boiler cleaning, sump cleaning and powerful enough for any large or difficult industrial, store or building job. By-pass motor unit can be detached for use as a powerful blower or portable vacuum cleaner. Lid fits any 55 gallon tank, permitting shifting from one drum to another in a matter of seconds for easier disposal. Extra large tank and bag keeps machine operating longer between emptyings.

Simple to operate, nothing to get out of order, sturdily built for years of trouble-free service. The model No. 500-55 is only one of a large line of industrial and building vacuum machines, complete with attachments, all suited to a wide variety of uses and applications.

Write for full details today.



AMERICAN CLEANING EQUIPMENT CORP.
2031 South Halsted Street • Chicago 8, Ill.

If you write maker identify as **IEN - 6744**

INDIVIDUAL VULCANAIRE DUST COLLECTING UNITS

Are used on surface and other grinders where grinding dust must be removed.

Inexpensive, compact units, with no moving parts. Operated from your present air supply.

Installed in a few minutes, eliminating need for costly centrally located dust collecting systems.

The collector element is mounted on the side of the machine. Quickly cleaned, requiring no refills.

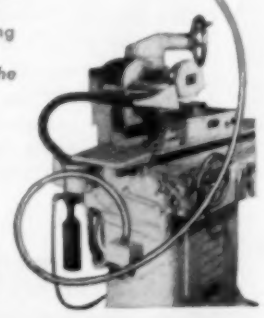
Vac-suction pick-up device (vacuum nozzle) is mounted on the grinding wheel guard or close to grinding wheel on other applications. This mounting permits constant contact with dust as the wheel is moved up or down.

A simple needle valve operates the unit, and can be shut off whenever the machine is not in use.

Available in 700 series for grinding wheels 7" dia. or less.

Made by the makers of Vulcanaire *The* jig grinding attachment.

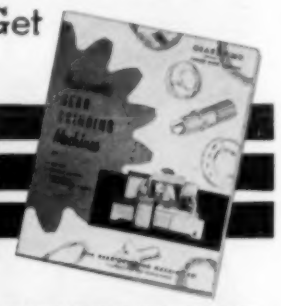
Write on your letterhead for "Dust Collector" Booklet.



VULCAN TOOL CO.
734 Lorain Avenue, Dayton 10, Ohio

If you write maker identify as **IEN - 6745**

New Formgrinding Catalog Shows How To Get Unequalled SPEED, VERSATILITY, ECONOMY With GEARGRIND AUTOMATICS



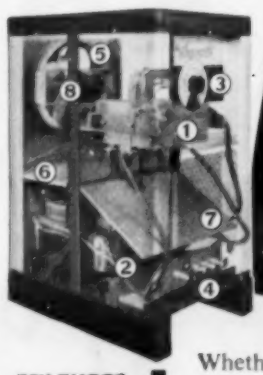
YOUR PARTS—for aircraft, automotive, and many machinery applications, will be ground faster, more accurately on Geargrind Automatics. See how and why in this comprehensive catalog—just off the press. It tells how and why Geargrind Automatics give you

- greater variety of work
- operations never before possible
- an unmatched combination of features
- engineering service that's *really* helpful.

GEARGRIND *Detroit* — SEND TODAY

3923 Christopher, Detroit 11, Michigan

If you write maker identify as **IEN - 6746**



TODAY'S MOST ADVANCED D-C WELDER DESIGN

Makes D-C welding easier, more efficient than ever before . . . costs less to operate and maintain.

FEATURES

1. Efficient Rectifier.
2. Exclusive Transformer Design. No moving parts.
3. Calibrated current control.
4. Three current ranges.
5. Heavy Duty Cooling Fan.
6. Accessible primary.
7. Sturdy, safe cabinet.
8. Easy-grab lifting hooks.

Whether you operate one machine or many, the new Sureweld Rectifier Welder is your best D-C welder buy. It has no moving parts . . . nothing to wear out or cause noise. Operation is quiet, maintenance costs are almost negligible. Current adjustments are easy because you simply dial the current you want.

But most important, you get the one right welder for *your* job. That's because there are 5 different models to choose from, covering a current range of 2½ to 750 amps. Each model has safety flush-front construction, sturdy, drip-proof cabinet. See this new welder at your nearest NCG branch office or authorized dealer. Or write for Bulletin NH-114.

Copyright 1953, National Cylinder Gas Company

NCG NATIONAL CYLINDER GAS COMPANY
840 N. Michigan Ave., Chicago 11, Illinois

If you write maker identify as **IEN - 6747**

this time-study saves you money!

BUSINESSES SAVE HOURS EACH DAY

you save 16 seconds every time you press a button

Actual time studies taken in hundreds of businesses show that an average of 18 seconds is required to make an "inside" speech contact through the switchboard. With *your own* AMPLICALL "clear line" *internal* communication system —you get *2-second speech contact* within and between departments. AMPLICALL frees busy switchboards for important outside calls —keeps personnel *on the job*, keeps talk terse—saves hours each day for the average business. AMPLICALL saves you money—pays for itself. There is a system to fit your special needs. Get the full facts today!

SEE YOUR PHONE BOOK
For your nearest AMPLICALL specialist, look under "Intercommunication" in your classified phone directory—or write direct for full information.

ELECTRONIC
AMPLICALL
INTERCOMMUNICATION

RAULAND-BORG CORPORATION
3515-K Addison Street, Chicago 18, Illinois

If you write maker identify as **IEN - 6748**

You can depend on the rugged MARK-TIME "5400" Bell Time Switch

SPECIFICATIONS
UL approved for 20 amperes, 125 volt, 1 HP or 10 amperes, 250 volt operation, AC only. Timings available from 60 seconds to 5 hours. Normally supplied with center stud mounting. Other mountings available on request.

This Mark-Time switch is built to uphold the reputation of your product. Install it in your appliances, devices or machines, and give your customers a *double-purpose* time switch. "5400" turns OFF the circuit at the end of a pre-set time period . . . and gives a clear warning bell signal. Your customers will like that *double* service!

"5400" has a wide range of applications . . . is available with a wide variety of modern dials and knobs . . . can be supplied as an "ON" type of unit on special order.

Write today for full details and prices.

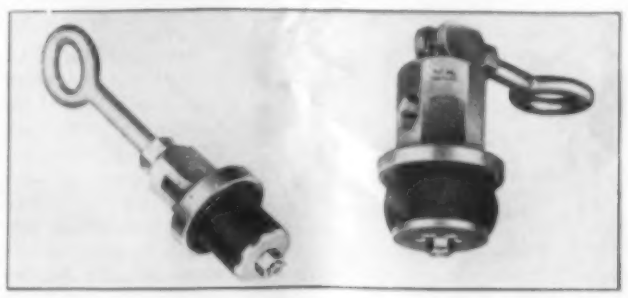
MARK-TIME
M. H. RHODES, INC.
HARTFORD, CONNECTICUT

Manufactured and sold in Canada by
SPERRY GYROSCOPE OTTAWA, Limited
3 Hamilton St., Ottawa, Ontario, Canada

If you write maker identify as **IEN - 6750**

SEALING . . Expanding plug and filling connector for pressure test

Source: MECHANICAL PRODUCTS CORP.
168 N. Ogden Ave., Dept. IEN, Chicago 7, Ill.



"Quick-Seal" Catalog 354

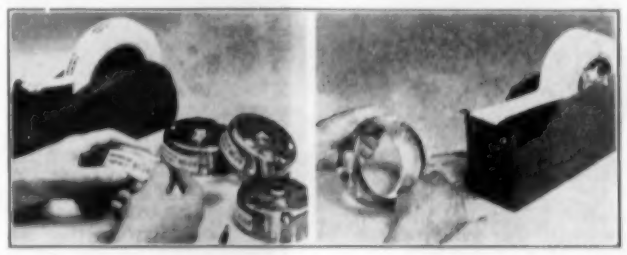
Openings, such as a drilled or threaded hole through flanges, couplings into a drum, casting, pressure vessel, tank, are closed and pressure liquid is admitted by this new Expanding-Seal test plug and its companion filling connector. Both rate to 100 lb. pressure in drilled holes. Both will handle higher pressures when they are employed in threaded or rough surface openings where the neprene expanding member can grip more firmly.

Expanding action, after the plug or connector is entered, is by turning the cam lever at the top of the assembly to apply compression on the neoprene element. The lever will hold in closed position until it is manually released. The test plug closes the opening into which it is inserted. The filling connector also provides a flow passage with threaded connection to a liquid supply line. Twelve sizes apply in $\frac{7}{16}$ to 4¼-in. bores or the equivalent ¼ to 4-in. pipe size. The filling connector flow passage ranges from ¼ to 2-in. pipe size. Sizes from ¼ to 2 in., in both the plug and connector, are carried in stock. Others are to order.

If you write maker identify as **IEN - 6751**

MARKING . . Self-adhesive tape adheres removably to oily metal surface

Source: LABELON TAPE CO.
450 Atlantic Ave., Dept. IEN, Rochester 9, N. Y.



Free sample upon request

Oil-Stik is a new material in the company's lines of self-adhesive tape. It is backed with an adhesive that combines with oil to produce a firm bond and, at the same time, permits the tape to be stripped off without leaving a mark. The bond becomes progressively stronger during the first hour due to the continuing action of the oil on the adhesive.

Application can be made directly on oily metal surfaces to employ the tape for identification purposes, to protect the surface and to protect operators against cuts and scratches from sharp edges. The tape is available in ½ to 22-in. width in 60-yd. rolls on 3-in. cores. It can be pre-printed to order.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6752**

Need Something Special ?

Besides complete coverage of standard Hand Numbering Machines and Metal Daters, this convenient reference book gives you full information on Special Assemblies — what's available and how to order. Over 40 pages of other valuable material and 40 photos.

Write for your free copy today.

WM. A. FORCE & COMPANY, INCORPORATED
216 NICHOLS AVENUE, BROOKLYN 8, N. Y.

If you write maker identify as **IEN - 6753**

Typical example: A manufacturer had been using ordinary firebrick for forge furnace linings. Came time for relining and they decided to try B&W *lightweight* Insulating Firebrick. Result: Their fuel bills went down fully 49% — a $4,800 saving in just one furnace. Heavy furnace linings waste your fuel dollars two ways: They soak up and hold large quantities of heat which are lost when the furnace is cooled; and they conduct and lose too much heat through the wall. Lightweight insulating firebrick, containing millions of tiny air cells, heat up and cool quickly, absorbing and storing very little heat. Also, they resist heat flow, keeping it inside the furnace to do productive work.

The lighter the insulating firebrick the greater your savings on fuel. The lightest you can buy are B&W Insulating Firebrick.

THE BABCOCK & WILCOX CO.
Refractories Division
General Offices: 161 East 42nd St., New York 17, N. Y.
Works: Augusta, Ga.
R 515

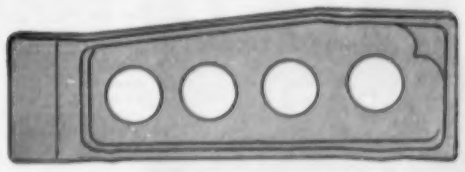
If you write maker identify as **IEN - 6754**

MUELLER BRASS CO.

ALUMINUM FORGINGS

- STRONG AS STEEL BUT 1/3 THE WEIGHT.
- GOOD DIMENSIONAL STABILITY . . . MECHANICAL PROPERTIES RETAINED AT HIGH SPEEDS AND REASONABLE TEMPERATURES.
- REQUIRE LESS MACHINING AND FINISHING.
- FORGED TO YOUR SPECIFICATIONS.

MUELLER BRASS CO. • PORT HURON 26, MICHIGAN



102

If you write maker identify as **IEN - 6755**

BACKED UP by GEARS FROM STOCK

Even when you specify such phenomenally long life gear sets as Cone-Drive double enveloping gearing, it helps to know that if you ever need replacements you can get them —*from stock!*

Make sure of that by specifying *STANDARD* Cone-Drive gear sets and reducers.

They will also give you these "plus" advantages:

- **Smaller center distances**
- **Up to 2/3 less weight**
- **More teeth in contact**
- **Lower overall cost**

STANDARD Cone-Drive gear sets come in ratios from 5/1 to 70/1; will handle loads from fractional to over 800 hp. Write for specifications.

CONE-DRIVE GEARS
DOUBLE ENVELOPING GEAR SETS & SPEED REDUCERS
Division, Michigan Tool Company
7171 E. McNichols Road • Detroit 12, Michigan

If you write maker identify as IEN - 6756

MARVEL No. 8, Capacity 18" x 18"

There is no other sawing machine like it. The work remains stationary. The blade is guided with a 90° twist and power fed vertically through the work. The saw blade and column can be instantly swung and clamped at any angle to 45° either right or left from vertical for miter cutting.

The number 8 MARVEL saw will handle the smallest, as well as the largest work up to 18" x 18". It will cut-off, trim, miter, notch, and split all bar stock, pipe, structural sections, moulding, tubing, or irregular shapes.

Write for our catalog, containing valuable information, enabling you to select a metal saw best suited to your work.

MARVEL *Metal Cutting* SAWS
Better Machines—Better Blades

ARMSTRONG-BLUM MFG. CO.
"The Hack Saw People"
5700 Bloomingdale Ave. Chicago 39, U.S.A.

If you write maker identify as IEN - 6757

Coppus Airplane Type Heat Killer®
cools large areas — restores efficiency

HEAT KILLER on the job in drop forge plant.

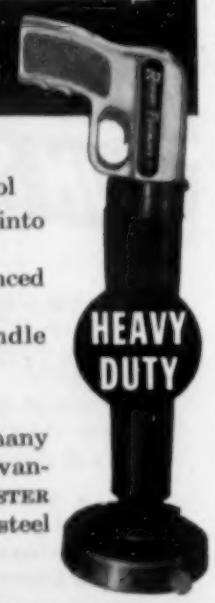
Steel mills, drop forge plants, foundries and other plants with hot working conditions find this Coppus Heat Killer increases worker efficiency . . . at reasonable cost. *A single fan cools large areas.*

Other types also available for cooling furnaces, electrical equipment, for driving out gases, drying out products, drawing out fumes. Write now for detailed information. COPPUS ENGINEERING CORPORATION, 146 PARK AVENUE, WORCESTER 2, MASSACHUSETTS.

ANOTHER COPPUS "BLUE RIBBON" PRODUCT

If you write maker identify as IEN - 6758

NEW! **Ramset** FASTENING SYSTEM
SUPER-POWER JOBMASTER



- Shortest, lightest, heavy-duty tool
- Greatest driving power—fastens into 1" steel or into hardest concrete
- New power-sealed charges, balanced to the tool
- Circle-Set Shield, with 12 handle positions
- Faster, easier operation

Ask your dealer to show you the many time-saving and money-saving advantages of the SUPER-POWER JOBMASTER for maintenance fastenings into steel and concrete.

Ramset Fasteners, Inc.
Ramset Division, Olin Industries, Inc.
12143 BEREA ROAD • CLEVELAND 11, OHIO

FIRST IN POWDER ACTUATED FASTENING — AN Olin PRODUCT

If you write maker identify as IEN - 6759

HEATING . . Infrared lamp, nickel chromium element in quartz tube

Source: FISHER SCIENTIFIC CO.
717 Forbes St., Dept. IEN, Pittsburgh 19, Pa.

List is $9.50

Seven of the 12-in. of overall length of this new Glo-Quartz heating element are brought up to red hot temperature by the enclosed 400-watt nickel chromium element operating at 1,700 deg. F. At the same time, the 5 additional inches remain sufficiently cool so the unit can be held in a person's bare hand.

It can be immersed in liquid without danger of cracking due to thermal shock. It can be employed in a pipe line, a miniature high temperature bath, a table top vaporizer or steam generator or as the heating element for a small furnace.

Operation is on 110-volt input. A regulator and relay can be employed for fast automatic control. A voltage reducer applies to hold the temperature below a pre-determined point. Outside diameter is about ½ inch. The assembly includes an extension cord and plug.

If you write maker identify as IEN - 6760

LIGHTING . . Aluminum floodlight, takes 200 watt lamp, trunnion mounted

Source: GENERAL ELECTRIC CO.,
Dept. 6X-201, Schenectady 5, N. Y.

For utility use

Type L-66 is a new aluminum housing floodlight that can be adjusted through complete circles in vertical and horizontal planes. The unit takes a 200-watt general service lamp to produce a 946 candle power beam. Mounting is on an aluminum base. Weight is 4 pounds. A 6-ft. cord and plug are included.

The lens is made of heat and weather resistant glass. It is held in place by a snap ring clamping band. The lamp mounts in a porcelain base socket. Knock-outs in the base permit mounting on a 3¼ or 4-in. outlet box.

If you write maker identify as IEN - 6761

Concentrated liquid, known as CC63 Chamois Cleaner, is mixed with water to make a solution that will remove dirt, grease and foreign matter from a chamois skin and slow up further accumulations on the skin. A quart makes 960 gallons. Schroeder & Tremayne, Inc., 1711 Delmar Blvd., Dept. IEN, St. Louis 3, Mo., is the source.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6762

NEW CATALOG

tells how to get the NEW LOOK in design This new 28-page catalog shows you how you can use Penmetal expanded metal to obtain, for your products, that smart, clean, attractive appearance that typifies modern trends in design.

Here, you will find mesh sizes, weights, gauges, and dimensions, as well as many illustrations showing how Penmetal expanded metal is used to add beauty, strength and utility in hundreds of applications.

Ask for a copy of catalog 502-EM. No cost or obligation.

PENN METAL COMPANY, INC.
General Sales Office: 205 East 42nd St., New York 17, N. Y.
Plant: Parkersburg, W. Va.

PM-44

If you write maker identify as IEN - 6763

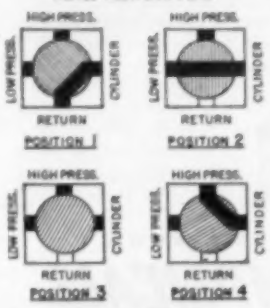
"Shear-Seal"

DUAL PRESSURE VALVES

Water and Oil service to 3000 p.s.i.

The first and second position provide fast "return" and "advance" with throttling in between for "inching" to any desired degree. The "stop" position gives the operator a chance to hold everything instantly, perhaps to check rather than wreck the dies. And finally the high pressure position serves for "bumping" and the "squeeze." Such a maneuverable valve is possible, because of the leak-proof Barksdale "Shear-Seal." They "wear-in" where others "wear-out."

FLOW PATTERN
VIEWED FROM SHAFT END

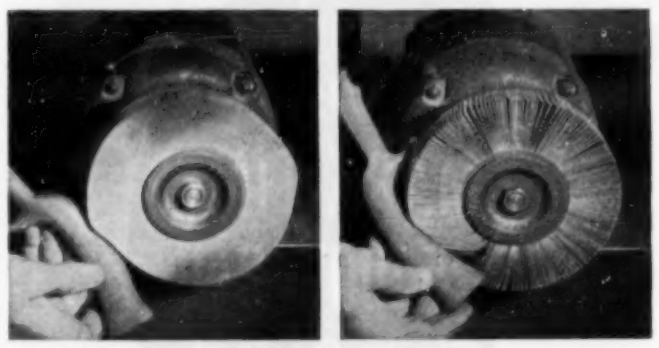


BARKSDALE VALVES
5125 ALCOA AVE., LOS ANGELES 58, CAL.

If you write maker identify as IEN - 6764

GRIND-O-FLEX

the new flexible
GRINDING WHEEL

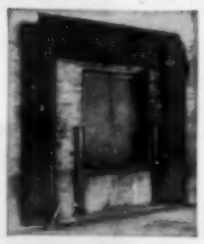


- ★ Removes burrs, flash, tool marks from irregular surfaces
- ★ Will not "flat" or dig into contoured shapes
- ★ Finishes metals, plastics; satin finishes stainless steel
- ★ Requires no special equipment, attaches to power tools
- ★ Safe and easy to use, requires no skill or experience
- ★ Comes in a wide variety of aluminum-oxide grits
- ★ See your Industrial Supply Dealer or write for catalog

MERIT PRODUCTS, INC.
4023 Irving Place, Culver City, California
Manufacturers of SAND-O-FLEX and GRIND-O-FLEX abrasive tools

If you write maker identify as IEN - 6765

CAPCO Dock Covers completely enclose the space between car and building doorways protecting loading and unloading during bad weather...preventing accidents... insuring against loss of heat or refrigeration. 51 different models in any size for every loading problem.



CAPCO

Write for literature and name of nearest distributor.

622-24 PROSPECT AVENUE • KANSAS CITY 24, MISSOURI

If you write maker identify as IEN - 6766

100 TO 40,000 POUND COIL CAPACITY LITTELL REELS

No. 25-18—Littell Motor Driven Automatic Centering Reel With Arm Control. Coil Capacity, 2,500 lbs.

Whether you feed stock from 100 pound coils or 40,000 pound coils, there is a Littell Automatic Centering Reel to meet your needs . . . motor driven, electric brake and plain brake reels. Every Littell Reel is designed for swift, safe coil replacement and smooth, *controlled* uncoiling. All models combine smooth running accuracy with rugged construction that assures *extra* years of dependable service.

Ask for a Littell Coil Weight Calculator

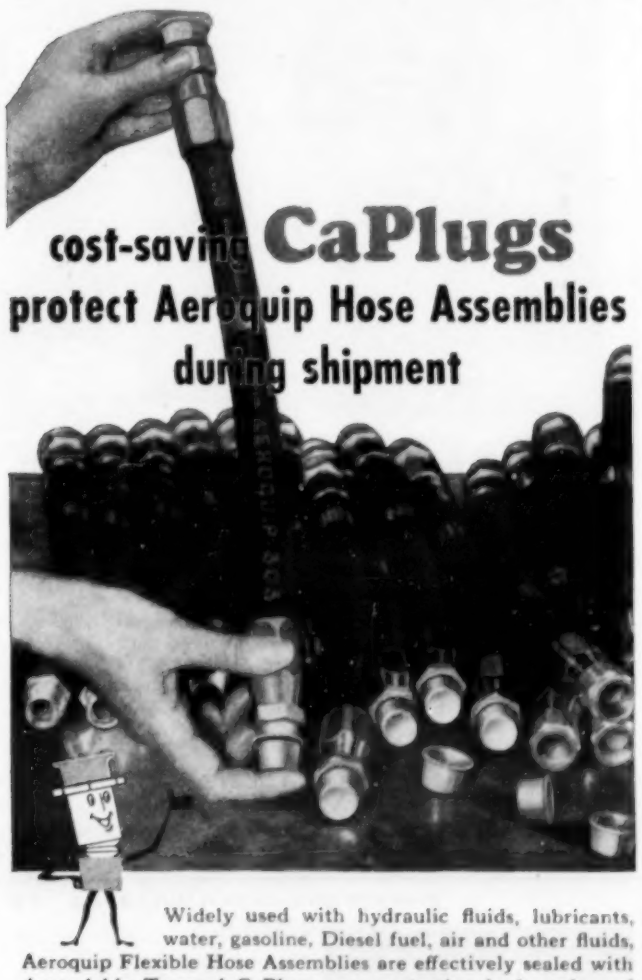
Write for Littell Reel Catalog Data

F. J. LITTELL MACHINE CO. — Speed with Safety

ROLL FEEDS • DIAL FEEDS • STRAIGHTENING MACHINES • REELS • AIR BLAST VALVES — District Offices: Detroit, Cleveland

4133 N. RAVENSWOOD AVE., CHICAGO 13, ILL.

If you write maker identify as IEN - 6767



Widely used with hydraulic fluids, lubricants, water, gasoline, Diesel fuel, air and other fluids, Aeroquip Flexible Hose Assemblies are effectively sealed with dependable Tapered CaPlugs . . . protecting both male and female end fittings during shipment.

Stressing the fact that, "Every hose assembly is pressure tested before leaving the plant, and the hydraulic fluid remaining in the hose would attract dirt," Aeroquip Corporation states, "CaPlugs are both easy to insert and effective in keeping the interior of the hose free from dust and moisture."

Molded of tough, flexible Polyethylene and impervious to all common chemical reagents, acids and solvents, multi-purpose CaPlugs will not chip, break or shred under most severe conditions. Furnished in five standardized designs, they are stocked in over 100 sizes to meet most requirements.

Write for catalog, price lists and free CaPlug assortment.

CaPlugs
DIVISION
PROTECTIVE CLOSURES CO., INC.
2203-5 ELMWOOD AVE. • BUFFALO 23, N. Y.

TAPERED CAPLUGS — For use as caps or plugs, inside or outside of threaded or plain fittings.

EC SERIES — Thread-protecting dust caps for electrical connectors. Fit over threaded or plain fittings.

CD SERIES — Threaded seal and shipping caps. Knurled for ease of application.

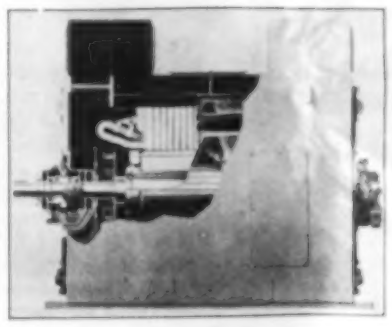
PD SERIES — Threaded Plugs for aircraft and hydraulic tube fittings. Seal beyond ordinary requirements.

NEW SERIES SC SLEEVE CAPS NOW AVAILABLE

If you write maker identify as IEN - 6769

MOTOR . . Two pole induction, for boiler feed pump, 900 hp. or more

Source: ALLIS-CHALMERS MFG. CO.
909 S. 70th St., Dept. IEN, Milwaukee 14, Wis.



Accessible bearings

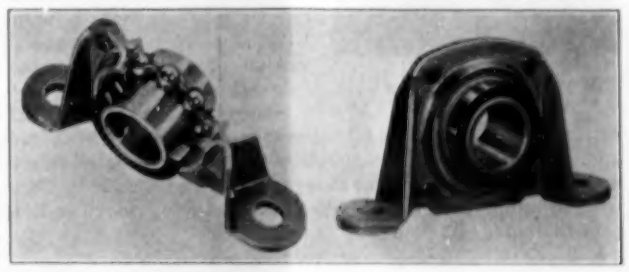
Illustrated is new design of the company's two-pole 60-cycle 3,600-rpm. induction motor in which is a new ventilating layout, an improved oil seal, top air intake and discharge, and improved protection for the bearings. The rotor fans are now centrifugal design to minimize noise. Interior core ventilation has been redesigned for spiral action to eliminate the need for a vent duct from the motor and to avoid the problem of dirt and dust. Air from the rotor fan passes across the stator coil ends into intake air compartments at the back of the yoke. It moves from there spirally between the stator laminations to cool both the stator and the rotor.

Air inlet and outlet are at the top of the assembly so dirt is not sucked into the outlet and water cannot splash into it. Warm air discharge is directed away from workers near the motor. The capsule type bearing will not leak oil in high speed operation. The bearing housing is cored for atmospheric pressure relief so oil vapor will not get into the motor from the bearing.

If you write maker identify as IEN - 6770

BEARING . . Pressed steel housing mounts self-aligning ball bearing

Source: LINK-BELT COMPANY
307 N. Michigan Ave., Dept. IEN, Chicago 1, Ill.



Illustrated folder 2517

The two halves of this new Series JPS-200 ball bearing pillow block are overlapped at the mounting feet and are riveted together. They provide a spherical seat for the outer race of the self-aligning sealed ball bearing. The inner race is fitted with a spring locking collar through which two knurled cup point set screws are threaded to lock the inner sleeve in place on a shaft. This race is bored for a slip fit for free shaft application.

Nine sizes take shafts measuring ⅝ to 1¼ inches. They support the shaft at $1\frac{5}{16}$ to $1\frac{11}{16}$ in. above the base. It measures 4⅝ to $6\frac{5}{16}$ in. in length by $1\frac{1}{16}$ to $1\frac{7}{16}$ in. in width. Overall housing height is about 2⅜ to 3⅜ inches. Weight is 0.7 to 1.8 pounds. Load rating is 365 to 656 lb., based on rotating speed at 100 rpm. Minimum life is rated at 20,000 hours.

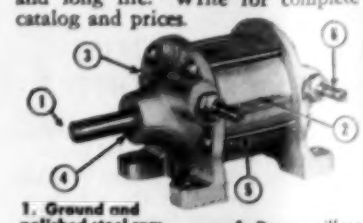
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6771

AIR-MITE AIR CYLINDERS

Low Cost . Compact . Powerful . Rugged

AIR-MITE Cylinders—made in single or double acting series—in 4 mounting types, are high quality cylinders at a low price. Simple, rugged design and compact construction give them long life, permit easy mounting on jigs, fixtures, tools, or machines. Used wherever power holding, pushing, pulling or lifting is required, AIR-MITE cylinders will meet your most exacting standards of dependability and long life. Write for complete catalog and prices.



1. Ground and polished steel ram
2. Brass, true-bore cylinders
3. High strength aluminum alloy cylinder heads
4. Bronze oilless ram bushing
5. Five steel tie rods
6. Brass hose stems

4 Mounting Types

AIR-MITE

4419 W. CARROLL AVENUE • CHICAGO 24, ILLINOIS

If you write maker identify as IEN - 6772

THE NEW Roll-O-MATIC

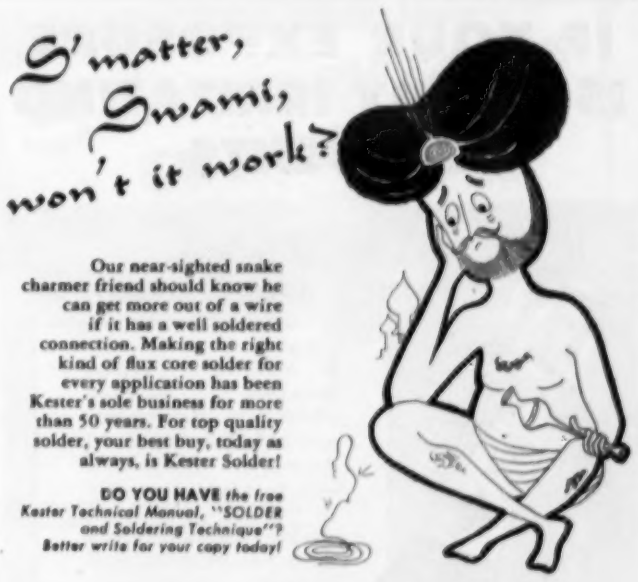
ANOTHER AIR FILTER "FIRST" FROM AAF

A "dry" type viscous air filter which maintains its efficiency by automatically introducing clean AMER-*glas* filtering media from continuous roll mounted at top and re-rolling the dust laden media on spindle at bottom. Movement of filter curtain is regulated by pressure differential switch.

Under normal operating conditions, one roll of low cost AMER-*glas* is sufficient for one year's operation for 10,000 cfm of capacity. For complete information on the new ROLL-O-MATIC, call your local AAF representative or write direct for Bulletin 248.

American Air Filter
COMPANY, INC.
335 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.

If you write maker identify as IEN - 6773



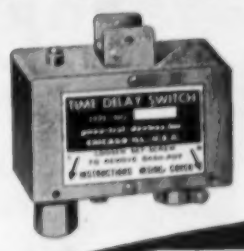
Our near-sighted snake charmer friend should know he can get more out of a wire if it has a well soldered connection. Making the right kind of flux core solder for every application has been Kester's sole business for more than 50 years. For top quality solder, your best buy, today as always, is Kester Solder!

DO YOU HAVE *the free Kester Technical Manual, "SOLDER and Soldering Technique"? Better write for your copy today!*

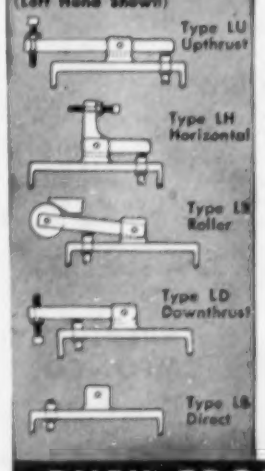
KESTER
SOLDER COMPANY
4211 Wrightwood Ave. • Chicago 39, Ill.
Newark 5, N. J. • Brantford, Canada

If you write maker identify as IEN - 6774

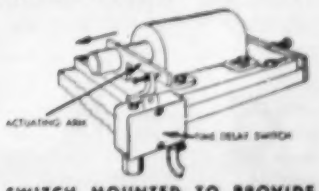
NEW CYLINDER TIME DELAY CONTROL SWITCH INCREASES APPLICATION . . . WIDENS USE OF CYLINDER POWER



For Any Type Actuation Left or Right Hand (Left Hand Shown)



Pneu-Trol Time Delay Switches provide independent hydraulically controlled adjustable time dwell between ¼ and 60 seconds in 20 to 1 ratios. Readily mounted on machine for cylinder dwell at a positive stop. Compactly designed — a simplified low cost answer to electrical time dwell control of any air or hydraulically operated machine movement such as press work, burnishing, coating, quenching, Metal-cutting, etc. Ideal for automatic feeders.
Dimensions: 4⅛" wide; 2⅜" high; 1-7/16" deep. Overall height 4⅛".



SWITCH MOUNTED TO PROVIDE DWELL AT END OF POWER STROKE

Write for descriptive literature and complete details.

PNEU-TROL DEVICES, INC.
1438 N. Keating Ave. Chicago 51, Illinois

If you write maker identify as IEN - 6775

EMERGENCY or routine

Depend on your SKF Distributor for replacement ball or roller bearings or pillow blocks.

Whenever or wherever you need them in a hurry, this fast, local service is as near as your telephone.

Your SKF Distributor *knows* bearings—knows how to *keep* the right bearing in the right place.

SKF INDUSTRIES, INC., PHILA. 32, PA. — *manufacturers of* **SKF** *and* HESS-BRIGHT *bearings.*

SKF BALL AND ROLLER BEARINGS

IN EVERY INDUSTRY, SKF Puts The Right Bearing In The Right Place

If you write maker identify as IEN - 6776

IF YOUR EXPOSURE IS HIGHLY IRRITATING SOLVENTS

WRITE FOR THIS VALUABLE BOOK!

"The Answer To Industrial Dermatitis"

THE MILBURN CO., *Detroit 7, Mich.*

The Standard of Perfection in Protection

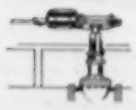
If you write maker identify as IEN - 6777

More Power to You *with* PORT-A-PONY

Everybody knows Port-A-Pony is the ideal portable power pipe threader for threading ¼" to 4" pipe in the shop or field, but . . .

Did you know —

Port-A-Pony will drive low speed winches used to pull electric cable through conduit?



Did you know —

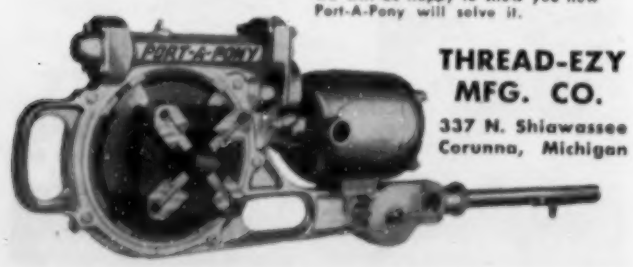
Port-A-Pony will open and close large gate valves doing the work of several men in a fraction of the time?

Did you know —

Port-A-Pony will drive flexible or rigid shafts replacing power take off units?

Yes, Port-A-Pony is built ruggedly with a ½ H.P. reversible motor whose power is converted into torque by the case hardened bronze ring gear that never fails.

Send us your specific problem and we will be happy to show you how Port-A-Pony will solve it.

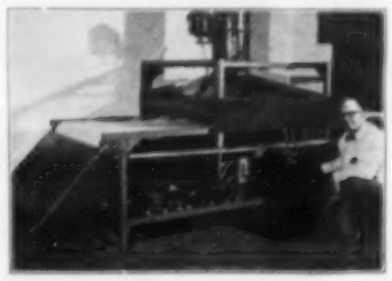


THREAD-EZY MFG. CO.
337 N. Shiawassee
Corunna, Michigan

If you write maker identify as IEN - 6778

HEATING . . Drying tunnel kit with infrared heaters for screen drying

Source: EDWIN L. WIEGAND COMPANY
7505 Thomas Blvd., Dept. IEN, Pittsburgh 8, Pa.



Bulletin L-1111

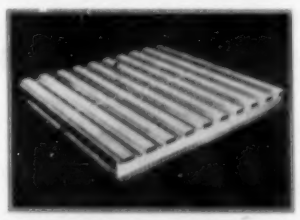
Two models are available in a new tunnel kit to meet production needs of the screen process industry. One model has a hood length of 46 in. and distance between belt centers of 84 inches. It contains three infrared heaters rated at 2.5 kw. each. The second model takes a 70-in. hood, 108-in. belt length and six heaters of the same individual rating.

Each kit provides the component parts required to construct a tunnel with a belt measuring 36 in.. in width. Belt speeds of 5.6 to 23.4 fpm can be obtained. Intensity of the all metal heaters can be varied between 4 and 100 per cent of their capacity. The kit contains Unistrut framing, variable speed transmission, drive motor, motor driven fan, Chromalox heat control equipment and directions for assembly.

If you write maker identify as IEN - 6779

HANDLING . . Aluminum pallets, regular, reversible, roll-in, 4-way

Source: LOUISVILLE METAL PRODUCTS CO.
1101 W. Oak St., Dept. IEN, Louisville 10, Ky.



Static load 1 ton

Illustrated is roll-in type in the company's new line of aluminum pallets. Its top deck is the same as the regular and reversible designs. A knurled top surface prevents slipping. Riveted assembly is at the lip section of the deck members below the deck surface.

Shoe type runners, on the roll-in design and also on the 4-way entry pallet, are tapered and spaced to present minimum obstruction to the wheels on a roller type pallet truck. Five sizes range from 30 by 36 in. to 48 by 48 in. in deck space. Weight is from a little under 18 lb. to a little over 35 pounds.

If you write maker identify as IEN - 6780

A public utility required some means to handle transformers in storage. It asked Orangeville Mfg. Co., Dept. IEN, Orangeville, Pa., to come up with a suggestion. **The Type** S-14 truck shown in the illustration was the result. The transformer hooks to the truck by an adjustable chain and is kept in upright position so its oil will not spill out. One man can handle transformers to 50 kva.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6781

NEW SURFINDICATOR* ACCESSORIES SIMPLIFY SURFACE ROUGHNESS CHECKS

The Brush SURFINDICATOR is a practical shop tool for measuring surface roughness quickly and accurately. These new accessories—motor drive and small bore adapter—extend the usefulness of the instrument. The motor drive provides an easy, rapid method of inspecting a large number of identical parts and is ideal for checking fine finishes. The adapter allows measurement in bores as small as ⅛" diameter, gear teeth, slots, lands, and other limited access areas. For bulletin write Brush Electronics Co., Dept. II-6, 3405 Perkins Ave., Cleveland 14, Ohio.

* Trade Mark

BRUSH ELECTRONICS COMPANY

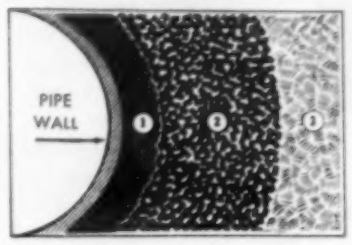
INDUSTRIAL AND RESEARCH INSTRUMENTS
PIEZO-ELECTRIC MATERIALS • ACOUSTIC DEVICES
MAGNETIC RECORDING EQUIPMENT
ULTRASONIC EQUIPMENT

formerly The Brush Development Co. Brush Electronics Company is an operating unit of Clevite Corporation.

If you write maker identify as IEN - 6782

GILSULATE®

the revolutionary new Triple-Zone insulation for hot underground pipes. Lowest cost per installed linear foot.



Zone 1: First line of defense against heat loss, corrosion, moisture: a dense semi-plastic core fused on by pipe's own heat.
Zone 2: Second line of defense against heat loss and water: a sintered zone of Gilsulate particles.
Zone 3: A zone of unfused Gilsulate providing final margin of thermal insulation with high load-carrying capacity.

Gilsulate granules fuse into lifetime protection on hot underground pipes; keep them insulated, water-proof, corrosion-proof, root-proof, acid/alkali-proof.

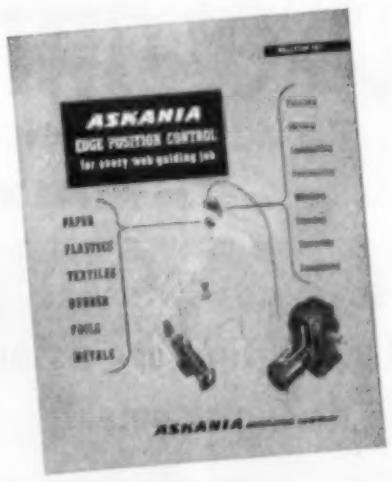
Gilsulate is easy to use:
1. Pour Gilsulate granules out of bag onto pipe.
2. Tamp down and backfill: *the job is insulated!*

Gilsulate has been tested in scores of the country's largest and most important installations. It needs no sleeves or mechanical sheaths. It requires no mixing or special handling. It can't be punctured, doesn't require removal of rocks from backfill. It can't tear or puncture pipe since it contracts and expands with the pipe.

Write for descriptive literature

AMERICAN GILSONITE COMPANY
134 West Broadway, Salt Lake City 1, Utah
or 1145 E. Jersey St., Elizabeth 4, N. J.
Affiliate of Barber Oil Corporation and Standard Oil Company of California

If you write maker identify as IEN - 6783



ASKANIA EDGE POSITION CONTROL for every web guiding job

This new 12-page book describes Askania Edge Position Control, the modern control for every web guiding job. Suitable for nearly every kind of material, from light scrim and fragile tissue to steel strip. Only a breath of air touches the controlled material—yet force and speed available for correction are practically unlimited. The system is simplicity itself—easy to install, easy to maintain.

Write for your copy of Bulletin 161.

ASKANIA REGULATOR COMPANY
280 E. Ontario Street Chicago 11, Illinois
Subsidiary of General Precision Equipment Corp.

If you write maker identify as IEN - 6784

For virtually any material: Pulp & Paper, Ore, Chemicals, Grain, Clay, Sand & Gravel, Foods, Waste Material

Single or multi-deck (Up to 5 fractions)
10 to 325 mesh screens
Wet or dry material
Easy to adjust
Self-contained (Ready to plug in)
18" or 48" dia. models

New "3-D" screening action

The unique "spiral-gyratory" action of the SWECO floating-screen Separator tumbles the material in all three directions at once . . . results in faster, more efficient separation . . . reduces blinding and clogging.

Send for illustrated catalog

Free analysis and recommendations

SWECO will make a detailed study of special screening problems without cost to you. SWECO Separators are sold on a guaranteed performance basis.

SWECO **"3-D" SEPARATORS**

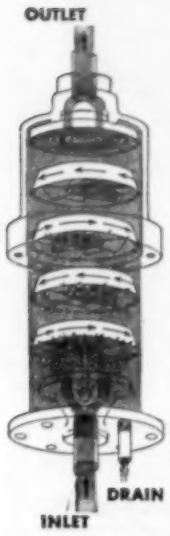
Engineers and Constructors . . . Manufacturers

Southwestern Engineering Company
4800 Santa Fe Avenue, Los Angeles 58
Dept. 23-40 Cable address: SWECOLA

If you write maker identify as **IEN - 6785**

EQUIPMENT LASTS LONGER ...PERFORMS BETTER... when the ARIDIFIER

SCRUBS, CLEANS AND DRIES On Air and Gas Lines

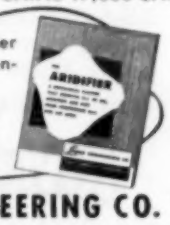


LASTS LONGER because...
The Aridifier's patented centrifugal-baffle action traps 92% of all dirt, oil, scale and water in gas or compressed air . . . and drains off these troublemakers *before* they can damage tools and equipment.

PERFORMS BETTER because...
The Aridifier protects tools against the freezing, fouling, caking and corrosion caused by dirt and foreign matter . . . assures the clean, dry air and gas that means better spray work, painting, lacquering, sand blasting, air cleaning, and similar operations.

Easily installed, the Aridifier maintains itself. 10 models. Capacity range; 7 CFM to 17,000 CFM.

Learn HOW the Aridifier scrubs with a patented centrifugal-baffle action.
Write for This Catalog Now!



Logan ENGINEERING CO.
4902 W. Lawrence Avenue, Chicago 30, Ill.

If you write maker identify as **IEN - 6786**

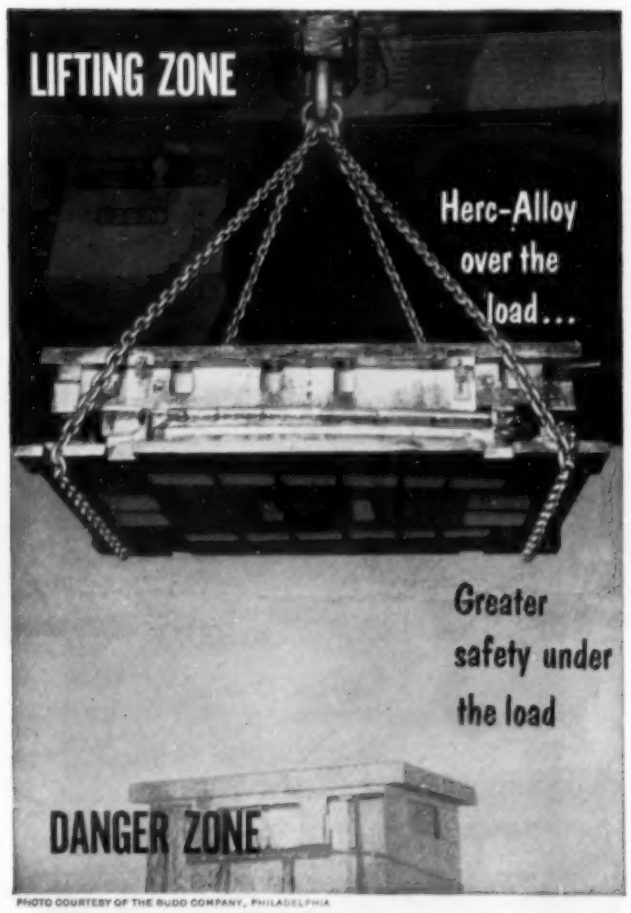


PHOTO COURTESY OF THE BUDD COMPANY, PHILADELPHIA

SPECIFY HERC-ALLOY SLING CHAINS

Write for Data Book

Herc-Alloy Sling Chains bring you many advantages. First and foremost...they offer maximum protection to men and materials. Secondly, their special alloy steel, processed by men with unmatched heat treatment know-how, gives long life and economy. Third, they weigh less (without any sacrifice in tensile strength) and are far easier for workmen to handle. That's why so many well-known plants are switching to Herc-Alloy Sling Chains.

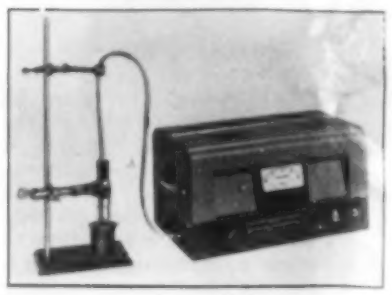
HERC-ALLOY ...is the original alloy steel chain

CM COLUMBUS McKINNON CHAIN CORPORATION
HOISTS AND CHAIN
TONAWANDA, NEW YORK
DISTRICT OFFICES: NEW YORK, CHICAGO, CLEVELAND
In Canada: McKINNON COLUMBUS CHAIN LIMITED, ST. CATHARINES, ONT.

If you write maker identify as **IEN - 6788**

TESTING . . Ultrasonic viscosimeter for continuous readings free from lag

Source: ULTRASONIC ENGINEERING CO. Box 46, Dept. IEN, Maywood, Ill.



For lab and plant

The sensing element in this new Ultrasonic instrument is an alloy steel reed measuring about 1⅝ in. in length by 3/32 in. in thickness. It is vibrated longitudinally at about 25 kc. per second. The signal, generated by the vibrating reed in air, is used as the standard. Subsequent immersion of the reed in any liquid causes damping of its vibration to reduce the magnitude of the signal sent to the indicator. This reduction is in direct proportion to the viscosity of the sample solution.

The meter on the instrument panel is calibrated to read directly and without time lag in centipoises times density. The probe can be mounted in a ring stand or installed in a pipe line or process vessel or held in the hand. Continuous measurements of solution viscosities can be made to a maximum of 100,000 centipoises.

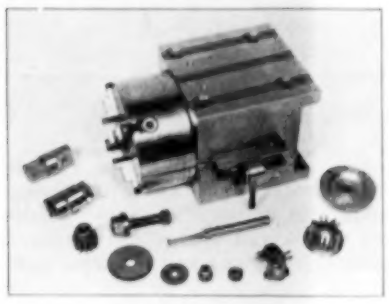
Three models include one for laboratory use and two for industrial application. One of the two is in water proof and explosion proof assembly in a cast aluminum housing. Provision is made to connect to any standard recorder-controller for continuous process monitoring.

Standard probes are designed to operate at temperatures to 400 deg. F. Special units can be supplied for 650 deg. F. The instrument operates on 110-volt 60-cycle ac. The laboratory Model A, illustrated, measures 11 by 10 by 9 inches.

If you write maker identify as **IEN - 6789**

INDEXING . . Dividing head to position work on a machine table

Source: GOODRICH HYDRAULICS 2182 N. Cedar St., Dept. IEN, Holt, Mich.



Precision assembly

The housing that constitutes the base for this new dividing head measures 6¼ in. in all three dimensions. It mounts a spindle with a No. 3 Morse taper and a 3/32 in. through hole. The spindle is assembled in precision ball bearings. A ⅝-in. keyway is in line with the spindle on three sides.

The head can be indexed in a number of equal divisions around a full circle by sliding a lever on the side of the housing to the desired number, then raising this lever and turning the spindle until the lever snaps back into the next position.

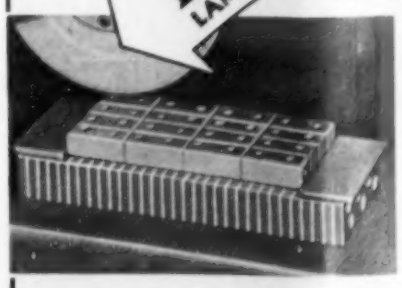
Accessories include a 6-in. 3 or 4-jaw chuck, a 24 and a 30-in. base and risers measuring 1, 2, 3 and 4 in. in height. A vernier can be supplied to divide the degree markings on the index plate into 60 and 100 parts. List price, with a center and tailstock, is $295.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6790**

SPEED SURFACE GRINDING SET-UPS WITH MAGNE-BLOX LAMINATED PARALLELS and V BLOCKS

Ideal for small pieces and any odd shapes that cannot be put directly on the surface plate.



- SAVE YOUR MAGNETIC CHUCKS
- ELIMINATE CLAMPS
- ELIMINATE HOLDING DEVICES

GRIND WORK SQUARE
GRIND WORK PARALLEL
HOLD ROUND PIECES

Universal set in Case $22.25

GEORGE SCHERR CO., Inc.
COMPLETE LINE OF PRECISION INSTRUMENTS
200-EN LAFAYETTE ST. • N.Y. 12, N.Y.

If you write maker identify as **IEN - 6791**

WANT A TABLE GUMMER GLUE THAT REALLY WORKS?

Paisley research has developed three *brand new* Table Gummer Glues...

1. TABLE GUMMER *BOTTLE LABEL* GLUE
2. TABLE GUMMER *TIN CONTAINER* GLUE
3. TABLE GUMMER *SHIPPING LABEL* GLUE

Each of these fine new adhesives possesses distinctive characteristics. Each one is specially designed for the job it has to do. No *one* all-purpose Table Gummer Glue can work with the same speed and efficiency on tin, glass, paper and other packaging materials. Now, with the right kind of PAISLEY Table Gummer Glue, labeling operations of this type can be performed with greater speed and efficiency. Labels *stay put* . . no shifting or falling off. Loose, torn edges, and spotty gumming are eliminated. Order a trial shipment TODAY, or send for free Adhesive Operation Data Sheet.

Paisley SCIENTIFIC ADHESIVE SERVICE

PAISLEY PRODUCTS INCORPORATED
Manufacturers of Glues, Pastes, Resin Adhesives, Cements and Related Chemical Products
1770 CANALPORT AVE., CHICAGO 16, ILL. ★ 630 W. 51st STREET, NEW YORK 19, N. Y.

If you write maker identify as **IEN - 6792**

5 REASONS FOR CALLING CORDS LTD. For Cords and Cord Sets

- ★ Fast delivery on cords of standard construction.
- ★ Complete engineering and manufacturing service on cords for special applications.
- ★ Integrated engineering-production control from rod mill to mold department.
- ★ Most comprehensive stock of dies and molds for electronic cords and assemblies in existence.
- ★ Quality proved by use on millions of products.

Write for New 1954 Catalog

WIRE SX PRODUCTS

CORDS LTD.
DIVISION OF ESSEX WIRE CORPORATION
121 DODGE STREET, DE KALB, ILLINOIS

If you write maker identify as **IEN - 6793**

New DRY TAMP PERMAMix Floor Patch

Don't stop traffic to repair floors—use Permamix, the new all-temperature DRY TAMP floor patch.

DRY TAMP MEANS SPEED • No sticky mass to dig out of the drum or to handle • Permamix dry pours • sets instantly • feather edges perfectly • no production delays • non-skid surface.

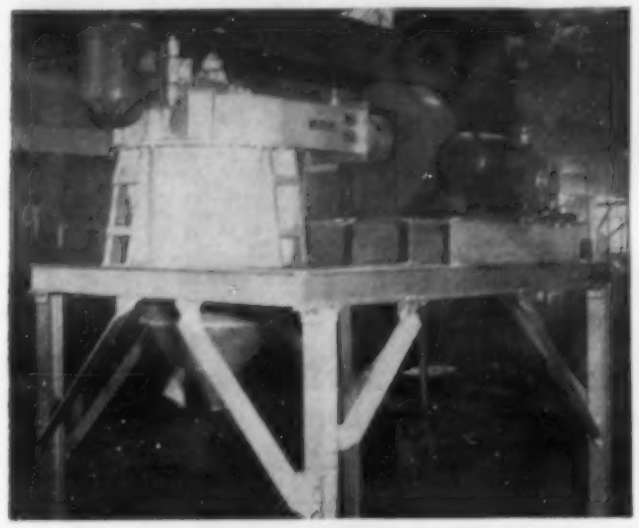
ALL TEMPERATURE • Won't freeze • can be stored or used in *any* temperature • will store indefinitely • a stock room item • will not "set" in drum whether open or covered. Mistakes just can't happen. Tamp in place and traffic rolls.

CUTS MAINTENANCE COSTS on concrete, brick, tile or asphalt floors • no special equipment or skill needed • a one man job • comes in durable 50 lb. net wt. fibre drums • solve your floor patching problems for good.

Write for Details Now!

PERMAMIX CORPORATION
230 N. LaSalle Street • Chicago 1, Illinois

If you write maker identify as IEN - 6794



New Type STURTEVANT Air Separator
Recovers Fines in Micron Ranges

Now the famous Sturtevant Whirlwind Air Separator, so widely used throughout industry for fast recovery of fines, has been specially designed to "pick-off" classified materials such as pigments, limestone fillers, plastics, oyster shells, etc., in micron sizes.

These highly efficient air separators select a continuously uniform product of desired fineness. Used in a closed circuit with grinding mills, they increase production, cut power costs.

Large feed opening, rugged construction, ease of adjustment, low power consumption assure economy of operation and minimum upkeep. Write for further information.

STURTEVANT MILL COMPANY
113 Clayton St., Boston 22, Mass.

If you write maker identify as IEN - 6795

NEW IDEA Sweeping American Industry

SBS WATERLESS WASH-STATION "Brings the Washroom to the Worker"

SBS Waterless Washstation Can Cut Costs, Save Money For You

American industry has a "new look" . . . along production lines . . . in critical trouble spots . . . wherever hard-to-remove industrial soils exist . . . you'll see SBS Waterless Washstations using famous SBS-30 Waterless Skin Cleanser. Proved by 6 years industrial usage, SBS-30 is unchallenged in its ability to SAFELY remove embedded grease, grime, paint, asphalt and most other stubborn soils — WITHOUT WATER.

Its safety has won the approval of some of the largest industrial hygiene and medical departments. Companies whose names you'd recognize immediately have had conclusive proof of the money-saving, production-increasing abilities of SBS Waterless Washstations. Find out the story for yourself, send for complete details.

SBS SUGAR BEET PRODUCTS CO. SAGINAW, MICHIGAN

Sugar Beet Products Co., Saginaw 8, Michigan
SEND details on the new SBS Waterless Washstation.

Name_____
Title_____
Company_____
Address_____
City_____ Zone____ State_____

If you write maker identify as IEN - 6797

GAGE . . Vernier caliper with attachments for height gage use

Source: GEORGE SCHERR COMPANY
200 Lafayette St., Dept. IEN, New York 12, N. Y.

For tool makers

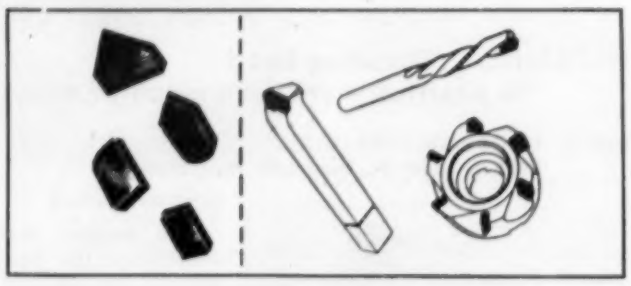
Microlock is a new combination vernier caliper and height gage employing a spring backed knurled wheel adjustment. The wheel can be pressed inward to release the adjusting screw and permit moving the slide to a desired approximate position. When pressure is released, the screw re-engages and the vernier can be adjusted by turning the screw in 1/128-in. divisions on one scale and on 1/1000 in. divisions on the other. The back of the scale carries a table of decimal equivalents.

Knife edge points are available for thread measurements, determination of root diameters, distances between holes and for layouts and scribing. Offset jaws are employed for inside measurements. Depth measurements are made with a thin blade that rides on the main scale. A detachable base and scriber convert the caliper into a height gage. The complete assembly lists at $33.50 when made of chromium steel. The list is $38.50 in stainless steel. Capacity is to 6 inches.

If you write maker identify as IEN - 6798

MACHINING . . Carbide tips and tipped tools for metal working

Source: SANDVIK STEEL INC.
111 Eighth Ave., Dept. IEN, New York 11, N. Y.



Made in Sweden

Coromant trade names a new line of tungsten carbide blanks and tipped tools for operations such as boring, facing, grooving, turning, threading and milling. The line includes a range of standard tool shapes and angles and standard carbide grades to suit given applications and machine tools. Each grade is color identified.

If you write maker identify as IEN - 6799

Inventory and production control, cost and payroll accounting may be handled soon by electronic digital equipment such as that under development by Logistics Research Inc., 141 S. Pacific Ave., Dept. IEN, Redondo Beach, Calif. Heart of the equipment is a memory drum that will handle 100,000 daily entries and "give" with the memorized information, whenever it is asked for, through input-output stations such as typewriters, teletypes.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6800

"HOW MEYERCORD SERVES INDUSTRY" No. 1 of a Series

MEYERCORD *Nameplate* DECALS Help You DESIGN Your Product

Here's a way to shave production costs starting in the blueprint stage . . . a complete and continuous service to you and everyone in your organization concerned with product development and merchandising.

Meyercord Nameplate Decals identify your product and instruct consumers in its use. We produce Meyercord Nameplate Decals for *any* commercial surface . . . for *any* temperature condition . . . for *any* production run, short or long. And we take over the design problem.

Your Meyercord representative will show how our decals surpass in ease and speed of application . . . with low unit cost. He'll show you how to cut time, labor, and material costs . . . and he'll place our laboratory at your service . . . without obligation.

FREE! "Mark-It" Manual of Decal Nameplates

Send today, on your company letterhead, for this valuable full-color guide to every industrial problem in marking, identification, instruction, and information.

THE MEYERCORD CO. *World's Largest Decalcomania Manufacturers*
DEPT. U-315
5323 WEST LAKE ST.
CHICAGO 44, ILLINOIS

If you write maker identify as IEN - 6801

RIVETT 3/8" flow control air valve

$6.25

Model 3620
Wt. 6 Oz.
3" Length x 1⅛" Hex.

150 P.S.I. AIR
300 P.S.I.
OIL OR WATER

Meters flow in one direction; allows free flow in opposite direction. Anodized aluminum body; nylon poppet; corrosion-resistant adjusting screw with slotted hex head. Tightening hex nut on opposite end of adjusting screw locks setting.

Call your local Rivett Dealer or write direct.

RIVETT LATHE & GRINDER, Inc., Dept. IEN 6 Brighton 35, Boston, Mass.

RIVETT FURNISHES A COMPLETE POWER PACKAGE

If you write maker identify as IEN - 6802

QUALITY UNMATCHED

The Milwaukee HOLE-SHOOTER *sets the pace* for electric drill performance. Today, Milwaukee Heavy-Duty HOLE-SHOOTERS are standard equipment, for production and maintenance uses, in countless plants . . . automotive, aircraft, radio, television, boat-building, furniture, shipyards, and in both railroads, light and heavy construction industries. Drilling capacities range from ¼" to ⅞" in steel, up to 4" in wood, and up to 2" in reinforced concrete . . . free chuck speeds, from 150 R.P.M. to 5000 R.P.M.

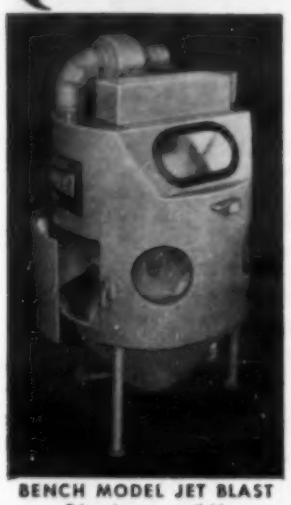
Call your Distributor for a Demonstration

MILWAUKEE ELECTRIC TOOL CORP.
5360 W. State St. • Milwaukee 8, Wis.

If you write maker identify as IEN - 6804

CLEANS METAL PARTS
BETTER • FASTER • CHEAPER

NEW LOW COST BENCH MODEL **JET BLAST**



BENCH MODEL JET BLAST
Other sizes are available

SAVES UP TO 60% IN LABOR COSTS

JET BLAST REMOVES Rust, scale and Foreign Deposits from Dies, Molds, Tools or other precision articles without dimensional alterations. Increases adherance and bonding qualities of paint, porcelain, rubber, electroplated metals and a host of other materials . . . Equally effective for cleaning threads for close, smooth fit.

JET BLAST will give any desired finish on flat or irregularly shaped objects . . . Sharp edges are retained.

JET BLAST is excellent for light burring on hard to-get-at surfaces.

JET BLAST materially increases tool life when used for honing cutting faces after grinding . . . Eliminates costly hand labor.

JET BLAST IS A TOOL ROOM NECESSITY

SEND FOR BULLETIN

DISTRIBUTORS:
A few territories are still open.

R·W·RENTON and Company
877 ADDISON ROAD • CLEVELAND 3, OHIO

If you write maker identify as IEN - 6805

NOW you can copy HALFTONES as well as LINE WORK by XEROGRAPHY
ONTO PAPER MASTERS FOR DUPLICATING

Photo above shows paper master of line and halftone subject prepared by xerography in XeroX® Lith-Master* copying equipment with the new XeroX Tone Tray. Copies run off on offset duplicator from paper master are also shown.

Use of the new Tone Tray in preparing offset paper masters offers a quick way of providing a few, or many copies of material containing line work and halftones at costs considerably less than conventional methods.

Xerography is used by companies of all kinds, large and small, in thousands of applications copying forms, letters, charts, bulletins, sales manuals, engineering drawings, price lists, etc., for duplicating. Anything written, typed, printed or drawn can be copied onto paper masters by xerography with XeroX Lith-Master copying equipment.

Write for complete information on what xerography can do to cut your duplicating costs.

*A TRADEMARK OF THE HALOID COMPANY

THE HALOID COMPANY
54-53X HALOID STREET • ROCHESTER 3, NEW YORK
BRANCH OFFICES IN PRINCIPAL U. S. CITIES AND TORONTO

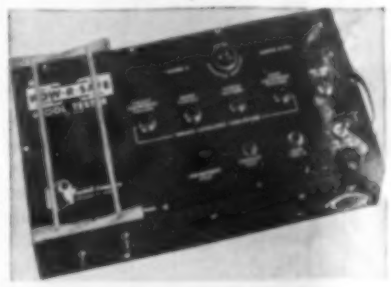
XEROGRAPHY
THE FASTEST, CHEAPEST, MOST VERSATILE WAY TO MAKE MASTERS FOR DUPLICATING.

XEROX

If you write maker identify as IEN - 6807

TESTING . . Electric instrument checks for faults in electric tools

Source: FENDALL COMPANY
4633 N. Western Ave., Dept. IEN, Chicago 25, Ill.



No skill required

Four new assemblies have been added to the company's Pow-R-Safe Tool Tester, previously described IEN-2349-53. The new models cover tools for operation on 110 and 220-volt single and three-phase circuits at 25, 60, 180, or 360 cycles. Installation in a tool crib permits the crib attendant to check tools prior to issuing them, and upon their return, to make certain that they are in good working order or to find those that require maintenance attention.

Test is initiated by pressing a single button after a tool has been placed in position on a rack at one end of the tester housing and plugged into a receptacle at the front. Automatic action is accomplished by a series of relays, any one of which stops the procedure as soon as a fault is detected.

The complete sequence requires 7 sec. to check the equipment ground circuit for continuity, pass current through the equipment sufficiently high to burn off a "whisker", check for present faulty or resistive equipment ground such as a loose or corroded terminal, check for presence of power ground at a potential of 500 volts to reveal doubtful tools and uncover the presence of carbon or moisture paths or insulation breakdown, check for presence of short circuits and operate the tool to reveal any faulty mechanical operating condition.

If you write maker identify as IEN - 6808

FASTENING . . Anchor locknuts are standard with nylon locking insert

Source: ELASTIC STOP NUT CORP.
2330 Vauxhall Road, Dept. IEN, Union, N. J.

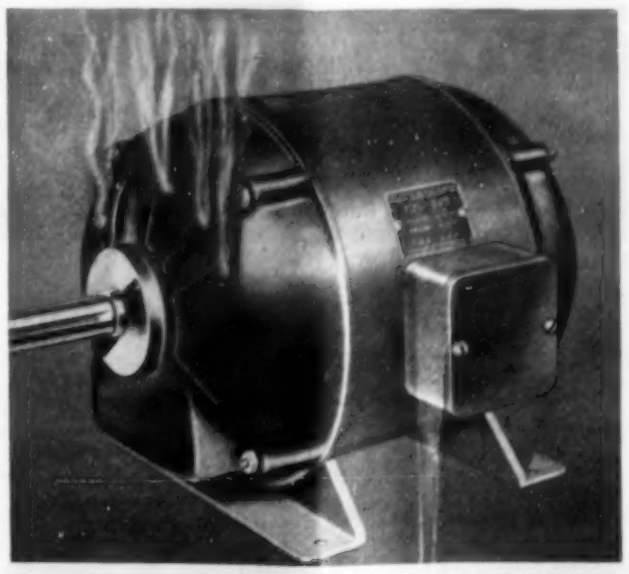
Typical designs

Nylon is now standard for the insert ring, as well as fiber, the previous standard material. The new assembly does not carry any premium price and is available in the many designs in the line. Applications are in structures where the anchoring member, in which the nut is assembled, is bolted, welded or riveted in place.

Turning a bolt through the nylon insert ring impresses the bolt threads into the insert material. This exerts a force, in compression, that brings the nut and bolt threads into evenly distributed metal-to-metal contact. The resulting friction prevents turning due to vibration, impact, relaxation of bolt tension. The nylon is not subject to attack by gasoline, kerosene, alcohol, lubricants, soaps, caustics. It is resistant to abrasion and can be used and reused.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6809



You Can • • • STOP MOTOR BURNOUTS

If you must change elements in a motor protection device to prevent nuisance stoppages in hot weather, it cannot adequately protect against motor burnouts when plant temperature drops.

More industrial plants are standardizing on Heinemann Circuit Breakers as manual motor controllers because they: (1) offer the same sure protection . . . without needless power stoppages . . . at any temperature, and require no form of temperature compensation, (2) may be rated exactly to the characteristics of the motor, and (3) provide the fastest circuit interruption under large overloads, stalled rotors, single-phasing or short circuits.

Figure the cost of a single burnout in man-hours, motor replacement, production loss—it's cost you can eliminate with Heinemann Circuit Breakers. Send for Bulletin 1810.

HEINEMANN ELECTRIC COMPANY
150 Plum Street • Trenton 2, New Jersey

If you write maker identify as IEN - 6810

Trying to control Corrosion?

Use Carpenter Stainless No. 20—for Super Corrosion Control of H_2SO_4—HNO_3—H_3PO_4—and other severe corrodents.

Send for this book of information on analysis, corrosion resistance, fabricating characteristics, and physical properties, of all available forms of Carpenter Stainless No. 20—bars, strip, and wire (contact The Carpenter Steel Company, Reading, Pa.)—tubing, pipe, sheet, and plate, contact . . .

THE CARPENTER STEEL COMPANY
Alloy Tube Division, Union, N. J.

If you write maker identify as IEN - 6811

KELLER AIR MOTORS

- Compact design with high power-to-weight ratio. Enclosed construction.
- Efficient with either high or low air pressure.
- Positive-acting, piston-type, constant torque motors with infinitely variable speed in either direction.
- ½ To 2¾ hp in a wide range of speeds and torques.

Send for illustrated descriptive Bulletin No. 70

Keller Tool Company
1329 Fulton St.
GRAND HAVEN, MICHIGAN

If you write maker identify as IEN - 6812

SAVE TIME • MANPOWER MACHINERY • MONEY

CLEAN FASTER, EASIER, BETTER

. . . *with a* **CLEMENTS-CADILLAC**

Save your equipment. Remove dirt, dust, grit, filings from every crack and crevice before they damage your machinery, decrease its efficiency. You'll reduce repairs, replacement, down-time.

Ask your mill supply dealer for a demonstration, or write us for information.

CLEMENTS **Cadillac** PORTABLE, ELECTRIC
Combination Blower-Suction Cleaner
MADE IN 5 MODELS, ILLUSTRATED 1 H.P.

"Most Useful Tool in the Plant"

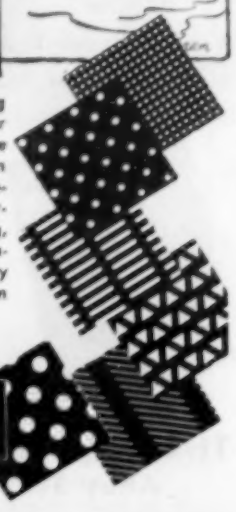
CLEMENTS CADILLAC COMBINATION BLOWER-SUCTION CLEANERS
CLEMENTS MFG. CO., 6620 S. NARRAGANSETT AVE., CHICAGO 38, ILL.
USED BY BUSINESS AND INDUSTRY FOR MORE THAN 44 YEARS

If you write maker identify as **IEN - 6813**

H & K Perforated Holes

A refreshing experience — the ol' swimming hole — and so it will be when you send your perforating problems to us. "If it can be perforated, H & K can do it" is a reputation of which we are proud. Whether your requirements are small or large, we are interested. We specialize in difficult perforating, involving stainless, plastics, small perforations and precision work. In over seventy years our perforating facilities have grown to be the most complete in the country.

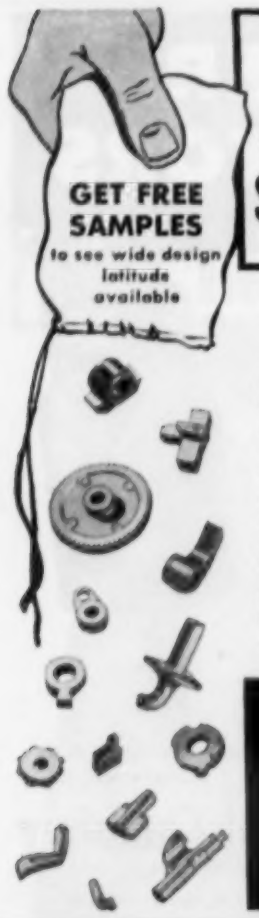
Ask for Catalog No. 62 for complete information.



The Harrington & King Perforating Co.

5637 Fillmore Street, Chicago 44, Illinois
114 Liberty Street, New York 6, New York

If you write maker identify as **IEN - 6814**



GET FREE SAMPLES to see wide design latitude available

BIG SAVINGS
thru high speed die-casting of
SMALL METAL PARTS

1000 per lb. to 3 per lb.

If you use small metal parts in quantity, investigate this way to cut piece-costs . . . consolidate parts . . . reduce machining operations. Our special small parts machines are *fully automatic* . . . combine the design latitude of die-casting with production rates comparable to screw machines, stamping presses, etc. Attractive tool costs. Send for "Small Parts Folder & Samples" . . . or send prints or samples for quotation. *Dollin Corporation, 630 So. 21st Street, Irvington 11, N. J.*

DOLLIN
SMALL ZINC DIE-CASTINGS

If you write maker identify as **IEN - 6815**

pays for itself!

It's the safe, sensible, economical way to handle wet or dry, hot or cold bulky materials. Simple, one-man operation does the job with amazing speed . . *cuts cost of hand unloading by at least 50%.*

This rugged Roura Self-Dumping Hopper is built to withstand the terrific knocks and bangs of rough usage. Extra heavy gauge metal and welded construction mean years of dependable service. Fits any standard fork or platform lift truck. Also available mounted on live skids—casters with malleable or rubber tired wheels. Sizes from ½ to 2 cubic yards. Thousands in use in America's biggest industries. Write today for more information. ROURA IRON WORKS, INC., 1409 Woodland Avenue, Detroit 11, Michigan.

ROURA Self-Dumping HOPPER

If you write maker identify as **IEN - 6816**

TIMING . . Electric interval unit assembled in explosion proof housing

Source: ZENITH ELECTRIC CO.
152 W. Walton St., Dept. IEN, Chicago 10, Ill.

Safe to use

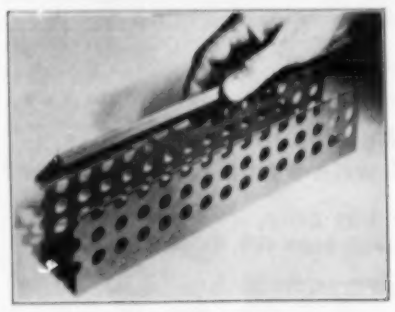
New assembly of one of the company's electric interval timers, in an explosion proof housing, makes the timer suitable for hazardous locations and dangerous applications. The knob that is turned to set the desired interval is connected to the switch operating cam. Energy to operate the switch is built up by turning the knob. This relieves the motor and its clutch of any drag.

The switch mechanism is single pole double throw and rates 10 amp. on 220-volt ac. The self-starting synchronous motor is sealed. No energy is required of the clock motor to trip the switch at the end of the preset interval. The unit shown provides a 30-min. range in half-minute steps. Other ranges can be specified.

If you write maker identify as **IEN - 6817**

ELECTRIC DUCT . . Plastic strips make walls and covers in panel wiring

Source: TAYLOR ELECTRIC INC.
15460 Dale, Dept. IEN, Detroit 23, Mich.

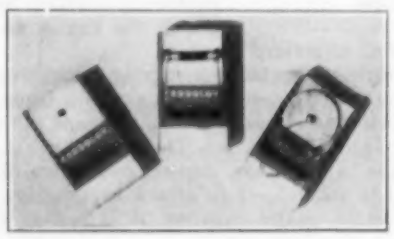


Patent applied for

Thermoplastic material with good dielectric, chemical and physical properties is employed in the manufacture of this new wiring duct. Its cover snaps on and off. Clips, inserted at regular intervals, hold wires in place and eliminate need for lacing. The material will not support combustion or warp under damp or moist conditions. It is available in lengths to 45 inches. They can be cut into sections with a knife.

If you write maker identify as **IEN - 6818**

Plastic foam filler inside a rectangular sleeve of cellulose acetate protects the tiny thermistors being manufactured by Carboloy Dept., 11167 E. 8-Mile Road, Dept. IEN, Detroit 32, Mich. One glance identifies each package as well as the type of thermistor. The problem of packaging identification and handling for these tiny components has been solved by this method.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6819**

STAMPINGS
PILOT RUNS

Special methods produce small quantities at minimum cost.

When you need just a few pieces —when you're still in the experimental stage — then an economical, cooperative source of parts is important.

Our **Machine-Cut Method** avoids custom die costs completely by use of special machinery which skillfully fashions pilot quantities.

Careful calculation determines the point at which labor costs warrant our **Short Run Method,** which uses simple contour dies and special presses.

Best of all, when you get into large quantities on the experimental part, our STAMPINGS DIVISION is still your most economical producer, using our **Production Method.** Thus all three methods are at your disposal. And impartial choice of method *saves money* for you!

SEND FOR LITERATURE

STAMPINGS DIVISION
"ONE PIECE OR ONE MILLION"

LAMINATED SHIM COMPANY, INC.

2106 UNION STREET • GLENBROOK, CONNECTICUT

If you write maker identify as **IEN - 6820**

RUST PROTECTION
***with* carbon ground rods**

A typical rust prevention use for Stackpole carbon ground rods is in the cathodic protection of pipe lines from external corrosion. Used as anodes, the rods are placed at intervals and a low-potential direct current applied between them and the pipe.

Stackpole ground rods are available in lengths to 60" and diameters to 3". They are equipped with sealed flexible copper leads.

Send details of your application for prompt recommendation by Stackpole engineers.

STACKPOLE

STACKPOLE CARBON COMPANY, *St. Marys, Pa.*

"EVERYTHING IN CARBON BUT DIAMONDS!"

If you write maker identify as **IEN - 6821**

EVERY ENGINEER
will want a copy of this new BULLETIN

It's easy to get the right answer for even your most special platen press *piping jobs* when you use this new engineering catalog on BARCO SWIVEL JOINTS. It is complete with pictures and diagrams showing correct application and contains all specification data for *improved* Barco Swivel Joints:

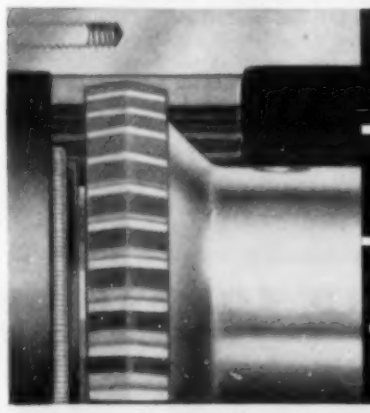
- **Leakproof! Perfect Sealing—Hot or Cold.**
- **No Binding, Low Torque! Trouble-free.**
- **Self-Aligning! Simplifies Installation.**

Send for a copy of new Catalog No. 265A and complete information. BARCO MANUFACTURING CO., 538G Hough St., Barrington, Illinois.

BARCO LEAKPROOF SWIVEL JOINTS

If you write maker identify as **IEN - 6822**

AJAX DIHEDRAL
COUPLINGS



most MISALIGNMENT CAPACITY

least BACKLASH

all GEARS HARDENED TO 50 TO 55 ROCKWELL C

Exclusive Ajax Dihedral tooth shape provides for maximum misalignment with tooth clearance (backlash) kept to oil film requirements. Positive oil seals keep lubrication in and dirt out. Write for catalog.

AJAX FLEXIBLE COUPLING CO. INC.
Incorporated 1920
WESTFIELD, NEW YORK

If you write maker identify as **IEN - 6823**

HOW TO PACKAGE SMALL ITEMS

Safely . . . with Visibility

LOOK INTO LUSTEROID PLASTIC VIALS and TUBES

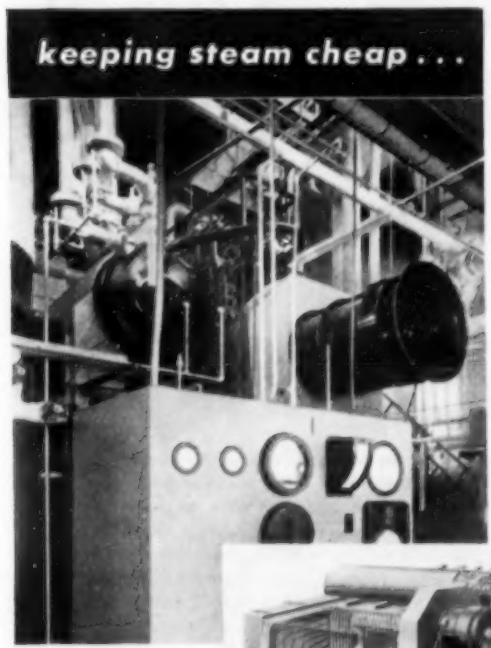
There's a LUSTEROID plastic container just right for carrying items too small for ordinary packaging. These crystal clear vials and tubes are strong, tough, unbreakable. Save you money, too. No labels to affix because LUSTEROID is printable. Cuts handling and shipping expense because it's so light in weight. Wide choice of colors in clear or opaque in standard diameters from ¼" to 1½" and lengths up to 6". Cork, slip-on and screw-cap closures.

Write for samples and details today.

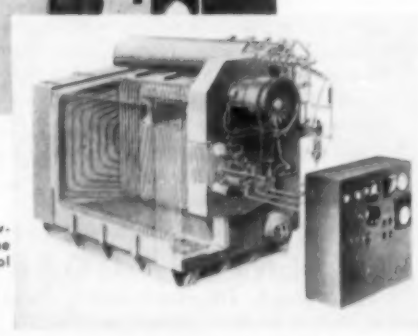
LUSTEROID CONTAINER COMPANY, INC.
10 West Parker Avenue, Maplewood, N. J.

If you write maker identify as **IEN - 6824**

keeping steam cheap . . .



One of the three B&W FM Boilers at the Buffalo Plant.



Typical arrangement showing sectional view of the FM Boiler and the control panel.

B&W Type FM Boilers Provide Economical and Efficient Steam Generation at AMERICAN - Standard

Since replacing five old units more than a year ago, three modern B&W Integral-Furnace Boilers, Type FM, have set and sustained high standards for economy and operating efficiency at the Stamping Plant of the American Radiator & Standard Sanitary Corporation in Buffalo.

Selected on the basis of previous experience with B&W Boilers—both FM and larger types—which are now producing steam at various other plants of the company, this multiple-unit FM installation has pleased both management and plant personnel. Overall boiler operating efficiency is 85%. Each of these versatile, self-contained, B&W units has a steam capacity of 27,500 lb per hr and is equipped with fully automatic controls. Designed for pressures to 250 psi, all three FM boilers are providing high pressure processing steam as well as steam for heating.

The choice of B&W FM boilers to supply plant steam requirements is an established trend that is putting more and more of these shop-assembled units into service for the broadest variety of industries, utilities, and other users, both here and abroad. Because it offers compact, "package boiler" benefits along with cost-saving big boiler advantages, B&W's FM Boiler is already in service or on order for a total steam capacity of more than 7,000,000 lb per hr. You can get this unique B&W "workhorse" in a range of standard sizes, for loads from 2900 to 28,000 lb of steam per hr at pressures to 235 psi. It is also obtainable for operation at higher pressures.

G-634

Write for Bulletin G-76 which gives complete details of the many cost-saving features of this popular, small boiler. The Babcock & Wilcox Company, Boiler Division, 161 East 42nd Street, New York 17, N. Y.

BABCOCK & WILCOX BOILER DIVISION

If you write maker identify as **IEN - 6826**

SCAFFOLD . . Wheel mounted assembly "bridges" plant and office equipment

Source: BIL-JAX INCORPORATED
102 Wyse Road, Dept. IEN, Archbold, Ohio

Tubular steel

Two ladder sections, 28 in. in width, two bridge type braces, four stem equipped casters and an expanded metal platform make up this new Handyman scaffold. The unit can be rolled through ordinary doorways. It will bridge equipment in a shop, or in an office, to permit overhead operations. The ladder sections are available in 3, 4, 5 and 6-ft. heights.

All of the parts are interchangeable with the standard Bil-Jax line of tower scaffolding. Several units can be combined to make a platform of any desired area. Individual units can be assembled on each other to make a desired multiple.

If you write maker identify as **IEN - 6827**

TRUCK . . Two wheel hand unit for appliances, stair climber treads

Source: AMERICAN PULLEY CO.
4200 Wissahickon, Dept. IEN, Philadelphia 29, Pa.

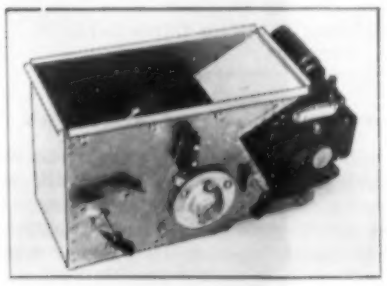
Rolls freely

Model B is a new reinforced steel hand truck to handle appliances. It is available with the company's design of stair climber tread consisting of free rollers and endless belts. The truck can be supplied plain if the special treads are not required. A Type "00" web strap, 15 ft. in length, and a patented self-tightening load buckle are supplied with each unit.

If you write maker identify as **IEN - 6828**

REFRIGERATING . . Ice crusher for use with Carrier ice cube machine

Source: FRANKLIN P. MILLER & SON, INC.
36 Meadow St., Dept. IEN, East Orange, N. J.



Easy to install

New crusher applies as an accessory on the Carrier ice cube making machine for delivery of crushed ice or whole cubes as determined by position of a selector knob. The user can turn the knob to produce fresh crushed ice from the cubes or he can shut the crusher off and divert the cubes to the storage bin of the main machine.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6829**

NEW SAFETY FEATURE

Pop-out ends accidents

A special feature of the new Rapistan Live Roller Conveyor is the pop-out action of the carrier rollers. This prevents injury to fingers and hands, accidentally thrust into unit. Designed to meet the need for a rugged power unit to be used with rough or heavy items, the Rapistan Live Roller is excellent for sweep-on and-off operations. A motor driven belt actuates rollers available in widths from 12" to 36". For complete information on this new, heavy-duty unit with exclusive safety features, write direct to:

The RAPIDS-STANDARD CO., Inc.
229 Rapistan Building, Grand Rapids 2, Michigan

Rapistan BETTER CONVEYING EQUIPMENT

If you write maker identify as **IEN - 6830**

NYLINED* BEARINGS

. . . with Smooth, Tough, Du Pont NYLON

Solve Many Bearing Problems

- Resiliency resists poundout
- Permit dry operation
- Minimize abrasion failures
- Silent operation
- Lower friction
- Superior corrosion resistance
- Damp mechanical vibration
- Eliminate friction oxidation
- Operate in liquids
- Close fits
- Non-contaminating
- Extremely compact
- Light weight
- Low cost
- Longer life
- Less maintenance
- Bearing surface instantly replaceable

*For further information and the name of your local representative, write

THOMSON INDUSTRIES, Inc.
Dept. 8
Manhasset, New York

Also Manufacturers of BALL BUSHINGS . . . the Ball Bearing for Linear Motions

If you write maker identify as **IEN - 6831**

NEW!

Lightweight Pallet Truck is Easiest To Pull . . .

. . . never needs greasing

Here's the best hydraulic pallet truck buy in years! New Lewis-Shepard Model HPL weighs only ½ as much as standard trucks . . . handles loads up to 2000 lbs. . . . costs you less to buy . . . and it's the easiest pulling truck made!

Factory-sealed ball bearings in the HPL eliminate periodic greasing . . . virtually eliminate all maintenance . . . insure longer truck life!

Get all the facts on this new, low cost, lightweight truck. Write for Circular 26A . . . TODAY!

The Most Complete Line of Materials Handling Trucks

LEWIS-SHEPARD
733-6 WALNUT ST., WATERTOWN 72, MASS.
The "MASTER" Line

If you write maker identify as **IEN - 6832**

NEW DESIGN OF THIS PULLEY LINE GIVES LONGER WEAR IN ANY SERVICE

American All Steel Conveyor Pulleys in 400 different sizes outlast any other pulley made. End discs and hubs fabricated to insure concentricity. Special welding techniques give extra strength and maximum weld penetration to all joints. Available in four types for all classes of service.

American Steel Split Pulleys built to run at 6000 feet per minute with an ample factor of safety are available from distributors everywhere. Interchangeable bushings mean quick, tight fit on any shaft. Over 500 sizes. See your distributor or write today for free catalogs.

AMERICAN PULLEY CO.
4240 Wissahickon Ave.
Philadelphia 29, Pa.

Gentlemen: Please send full information on _____. No obligation.

Name _____ Title _____
Company _____
Address _____
City _____ Zone ____ State ____

Power Transmission By **AMERICAN** PULLEY COMPANY

"At the PROFIT end of the machine"

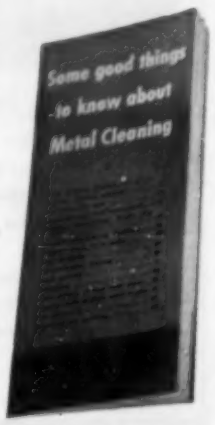
If you write maker identify as IEN - 6833

HOW DO YOU PUT A HEAVY PHOSPHATE COATING ON 90 MM. SHELLS?

HOW CAN WE GET BETTER ELECTROCLEANING AT LOWER COST?

Our 200 Oakite Technical Service Representatives answer questions like these every day. We thrive on questions about tank cleaning, machine cleaning, electrocleaning, pickling, preparation for painting, paint stripping, steam-gun cleaning, burnishing, rust prevention and related subjects.

Send us your questions on metal cleaning. There's no obligation. We'll be glad to advise you the best way we can.



FREE Also ask for our 44-page illustrated booklet *"Some good things to know about Metal Cleaning."* Just write to Oakite Products, Inc., 16A Rector St., New York 6, New York.

SPECIALIZED INDUSTRIAL CLEANING
OAKITE
MATERIALS • METHODS • SERVICE

Technical Service Representatives in Principal Cities of U. S. and Canada

If you write maker identify as IEN - 6834

For a few dollars more, you get a

FAR FINER TRUCK

MODEL L2P

RAYMOND *Lightweight*
PALLET LIFT TRUCK

● When buying a lift truck, don't be guided by price alone. Remember . . . performance is far more important. The RAYMOND Lightweight Lift Truck, for example, costs slightly more than similar trucks . . . yet there's a vast difference in how long and how well it performs!

● This 2,000-lb. capacity truck is constructed of only the finest materials, backed by 30 years of manufacturing skill. Nowhere in this RAYMOND Truck is quality compromised. The result is a rugged lift truck offering all these outstanding features:

ONE-PIECE WELDED FORKS . . . ⅓ times stronger than bolted fork construction.

CHROME PLATED PUMP PISTON . . . prevents leakage, prolongs pump life.

STRONGER CONSTRUCTION . . . heat-treated alloy steel ram pistons, axles, lever shafts.

HIGHLY MANEUVERABLE — **FOOT PEDAL OPERATED**
EFFORTLESS PALLET ENTRY — **REINFORCED HANDLE**
THOROUGHLY LOAD TESTED — **DUAL PURPOSE BRAKE**
FACTORY ADJUSTED LINKAGE — **LIGHTWEIGHT**

● *Mail This Coupon*

The RAYMOND CORPORATION
3523 Madison St., Greene, N.Y.

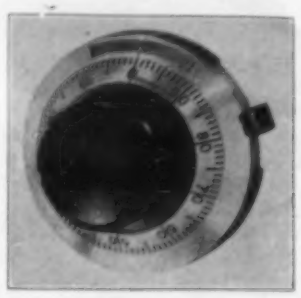
Please send me Bulletin 207, describing your 2,000-lb. capacity Lightweight Lift Truck, as well as your 4,000 and 6,000-lb. capacity Lift Trucks.

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

If you write maker identify as IEN - 6836

CONTROL . . Multiple turn dial for position adjusting and indicating

Source: HELIPOT CORPORATION
916 Meridian, Dept. IEN, So. Pasadena 12, Calif.



No backlash

Duodial Model RB is a new assembly of two coaxial dials and a black nylon knob, integral with the inner dial. This dial is calibrated to count hundredths of each turn. The outer dial is calibrated to count the number of complete turns to a maximum of 15.

The knob and inner dial are secured directly to the shaft of a rotating component so critical readings on the inner dial are free from backlash. The assembly can be rotated by either the knob or the shaft and so can be used to count power driven turns as well as to set an adjustment to a desired value.

Two sizes are available to fit ⅛ and ¼-in. shafts. Nominal diameter is 1⅛ inches. Weight is about 2¾ ounces. Standard finish is black filled satin chrome, but black dials, filled with white, and assemblies with either or both dials blank, or in special colors, can be specified.

If you write maker identify as IEN - 6837

THERMOMETER . . Recording design actuated by bulb and capillary tube

Source: ELECTRIC AUTO-LITE CO.
Mulberry & Champlain, Dept. IEN, Toledo 1, Ohio

Model 1000

A record of temperature is traced by a pen on a 6-in. circular chart in this new Model 1000 instrument. The chart is driven electrically or mechanically as specified. It is available in two speeds to include one revolution in 24 hr. or one revolution in 7 days. Standard charts are available with ranges between minus 40 and plus 500 deg. F.

Three types include a wall mounting unit with bottom connection and brackets to assemble on a panel or a wall, a portable unit shown in the illustration with a strap handle and the capillary tube on a spool at the back of the housing, and a portable self-contained unit also with a leather strap handle. The thermometer housing is made of aluminum. It is about 6½ by 3 by 7 inches. List price starts at $49.50.

If you write maker identify as IEN - 6838

Operators of the big mix-as-you-go concrete trucks are in better control of the mixing operation when the truck is equipped with a new electric device to count revolutions of the concrete drum. The device consists of a snap-action switch, a connector and an electric counter. The counter connects to the switch and through it to the truck's battery. The switch is actuated to make a count each time the drum completes a revolution. Switch maker is Micro Switch Div., 30 E. Spring St., Dept. IEN, Freeport, Ill.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6839

RUBBER-TO-METAL

BONDING

Through modern compounding and adhesive techniques developed in the Acushnet laboratories, the best properties of metal and rubber (natural & synthetic) can be combined in one bonded unit to obtain strength, toughness and resiliency, as well as shock and vibration absorption, sound abatement, electrical insulation or conductivity, corrosion and abrasion resistance, etc. Our engineers will gladly study your prints and make prompt recommendations.

Acushnet
PROCESS COMPANY

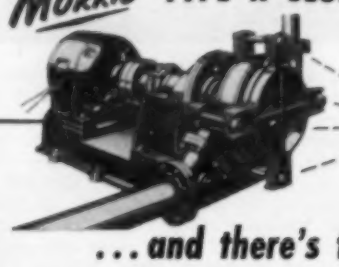
Send for your copy of Acushnet illustrated catalog supplement—"Rubber-to-Metal Bonding"

Address correspondence to 760 Belleville Ave., New Bedford, Mass.

If you write maker identify as IEN - 6840

Cuts Pump Maintenance Costs

MORRIS TYPE R SLURRY PUMP



REMOVE **4** BOLTS

. . . and there's the impeller!

Without disturbing the suction, the discharge piping or the bearings, you can inspect, unclog or remove the impeller on the Morris Type R Slurry Pump. Simply loosen 4 *outside* clamping bolts and pull off the end cover. Cuts maintenance costs and lay-up time to a bare minimum by getting the pump back in service quicker.

The Morris Type R Slurry Pump offers many other features you'll appreciate. Write for specifications, capacities, performance charts and other helpful information. Ask for Bulletin 181.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Representatives in Principal Cities

MORRIS *Centrifugal Pumps*

If you write maker identify as IEN - 6841

HARDWOOD LAMINATED **Bench Tops**

- **Counter and Table Tops**
- **Locker Bench Tops**
- **Special Glued Forms**

FROM the drying of the lumber in Sensenich's own kilns* to the cutting, forming and gluing of every hardwood laminated top, the highly trained Sensenich craftsmen play an important part. These skilled workmen use the finest equipment to produce high quality wood parts with thorough efficiency and economy. Remember too, Sensenich is the world's largest producer of wood propellers for personal planes. Sensenich has more than 20 years experience in conditioning, cutting and gluing wood forms to the most exacting standards.

We will be glad to quote on your requirements . . . your request will receive prompt attention.

SENSENICH

*Certified by the United States Air Force

SENSENICH CORPORATION
Dept. IN, Lancaster, Pennsylvania

If you write maker identify as IEN - 6842

NEW BORDEN SERRA-CRIMP FLOOR GRATING

has been especially designed to provide safe footing in places where the gratings are subject to excessive dampness, oil or grease. The crimp bars are serrated and raised slightly above the top surfaces of the bearing bars—providing positive footing at no decrease in strength. Shown above **BORDEN SERRA-CRIMP** grating in use in an area which had previously been very wet due to a tubing cleaning operation. Roadway type design supports weight of a loaded fork truck. *Photograph courtesy Tube Turns, Inc., Louisville, Kentucky.*

BORDEN METAL PRODUCTS CO.
813 GREEN LANE — ELIZABETH, N. J.
Southern Plant—Leeds, Ala. — Main Plant—Union, N. J.

If you write maker identify as IEN - 6843

FIRST high temperature hose assembly using TEFLON*

. . . handles even the most corrosive fluids to +450° F!

Fluoroflex†-T hose assemblies mark a tremendous advance in flexible line serviceability. Look at these features:

- Fluoroflex-T (Teflon compound) tube . . . chemical-proof, non-swelling . . . absorbs vibration
- Flexibility that doesn't change from −100° to +450°
- Stainless steel braid—for 1000 psi working pressures and for high external corrosion resistance
- Compact fittings swaged to armor and tube—won't blow off
- Light weight! Space saving! Non aging!

Write for Bulletin FH-1.

**DuPont trademark for its tetrafluoroethylene resin.*
†Resistoflex trademark for products from fluorocarbon resins.

RESISTOFLEX *corporation*

Belleville 9, New Jersey

If you write maker identify as IEN - 6844

. . . for less than you can yourself!

Our plants produce over 10 million small precision pieces every day—in the temper, hardness and micro-finish our customers require—to tolerances in tenths. What's more, we can make them *faster, better, and for less* than you can yourself.

Let us quote on your requirements. A letter outlining your needs plus a sample part or blueprint will receive prompt attention. If you desire more information, we'll be glad to send our Condensed Catalogue which illustrates many more of the parts we can produce quickly and economically.

THE TORRINGTON COMPANY
Specialties Division
900 Field Street, Torrington, Conn.

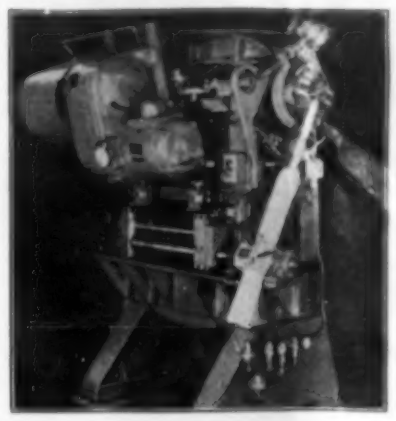
TORRINGTON SPECIAL METAL PARTS

Makers of Torrington Needle Bearings

If you write maker identify as IEN - 6846

PRESS . . Automatic 40 ton, strip feed, 72 to 360 strokes per min.

Source: DI MACHINE CORP.
2711 W. Irving Park Road, Dept. IEN, Chicago 18, Ill.



A Di-Matic press

Strip feed is mounted at the rear of this new assembly of the company's automatic 40-ton press, previously described IEN-3819-52. The new assembly provides 28 in. between the uprights compared to 19 in. in the original machine. Its air operated friction clutch and brake combine with electric controls and the built-in feed and scrap cutter for long run automatic cycles, employing plain or progressive press tools depending upon requirements.

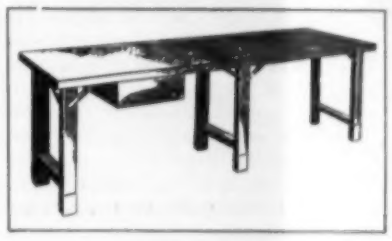
Air cylinders are synchronized with the movement of the crankshaft to open and close the feed rolls at any time during the working cycle as determined by the initial set-up. A valve and cam operate a work ejector. Four bronze bushings support the crank shaft. The ram operates in a 16-in. cylindrical slide with adjustable guides. Drive is by a 5-hp. motor and variable speed transmission. Maximum stroke is 2½ inches.

The bolster plate measures 22 by 27½ by 2½ inches. Distance from the bolster to the slide, with the stroke down and the adjustment up, is 7¼ inches. A 9 by 24 by 12-in. opening is provided in the bed. There is a 10-in. diameter space in the bed for an air cushion. Ram adjustment is through 1½ inch. Overall dimensions are 50 by 76 by 90 in. and weight is 1,500 pounds. The feed rolls are 23 in. in length. They can be set to feed strip stock to a maximum of 13 inches.

If you write maker identify as IEN - 6847

FURNITURE . . Steel bench has wood covered steel channel top

Source: EDSAL MFG. COMPANY
1044 W. Madison St., Dept. IEN, Chicago 7, Ill.



Model 5390

Pressed steel channels, measuring 6 in. between flanges, are secured together, flange to flange, to make up the warp proof heavy duty top of this new steel bench. The channels are covered with a ¼-in. sheet of tempered pressed wood cemented in place. The top is supported on steel channel legs adequately braced. The basic design, as shown in the illustration, lists at $17.75 in a 24 by 48 in. size.

The line includes 20 sizes in width multiples of 6 in. and in 4, 5, 6 and 8-ft. lengths. Leveling adjustments, on the individual legs, permit set-up on an uneven floor surface. Accessory parts, including backs and end stops, drawers and lower shelves and risers can be specified. Standard heights are 30 and 35 inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6848

Buschman Wheel and Roller CONVEYORS

Custom Systems from Standard Units

Gravity conveying systems to meet your needs are set up quickly from Buschman wheel and roller components. Lightweight aluminum or steel construction and Quick-Eez coupling make rearrangement fast and easy.

Buschman wheel and roller components include straight and curved sections in three widths, switches, adjustable tubular stands and accessories.

Buschman wheel and roller conveyors are stocked at the factory and by leading distributors throughout the country, who can engineer systems to meet your needs.

Write today for Bulletin 15

Complete Conveyor Systems For All Types of Industries
Engineered • Manufactured • Installed

PRODUCE MORE FOR LESS with Buschman Conveyors

THE E. W. BUSCHMAN CO.
4447 Clifton Ave. • Cincinnati 32, Ohio

If you write maker identify as IEN - 6849

J-M BLAZECRETE cuts refractory maintenance costs . . .

That's why it pays you to use this hydraulic-setting refractory for temperatures to 3000F.

BLAZECRETE* materially reduces labor costs, saves time in building and repairing linings.

For troweling, just mix Blazecrete with water as you'd mix ordinary concrete . . . then slap-trowel it in place. When gunned, it adheres readily with a minimum of rebound loss. Either way, Blazecrete goes on fast, without ramming or tamping. And Blazecrete linings *last*.

Blazecrete comes in three types. All harden on air curing, do not require prefiring. They are furnished as a dry mix—can be stored safely.

3X BLAZECRETE—For temperatures through 3000F. Excellent for forge furnace linings, lime kilns, burner blocks, soaking pits, and industrial boilers.

STANDARD BLAZECRETE—For temperatures through 2400F. Can be used by boiler manufacturers to replace fire clay tile in wall construction.

L. W. BLAZECRETE—For temperatures through 2000F. An insulating refractory . . . light in weight, low in thermal conductivity.

For full details, send for Brochure RC-28A. Write Johns-Manville, Box 60, New York 16, N.Y. In Canada, 199 Bay St., Toronto 1, Ontario.

*Reg. U. S. Pat. Off.

Johns-Manville BLAZECRETE
BUILDS BETTER REFRACTORY LININGS

If you write maker identify as IEN - 6850

See 2 Warehouses Here?

Actually, you don't. The owner of this industrial office originally bought two Armco Steel Buildings for use as warehouses. Then he decided there was a greater need for an office. So he combined the material for the Armco Buildings, changed around or added windows and doors, and finished the interior the same as any other structure. Result: an attractive, efficient building.

The ease of adapting Armco Steel Buildings made this possible. And you can get these all-steel structures to meet any floor space requirement. Erection is easy, economical, fast. They are widely used for shops, offices and warehouses on permanent or temporary sites. All offer low-cost maintenance.

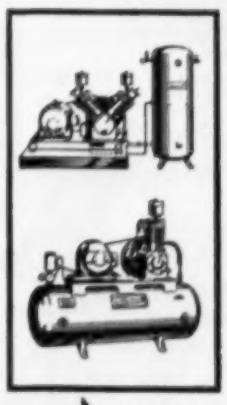
WRITE FOR THE COMPLETE MONEY-SAVING STORY

ARMCO DRAINAGE & METAL PRODUCTS, INC.
1124 Curtis Street • Middletown, Ohio

If you write maker identify as IEN - 6851

MORE FREE AIR PER HORSEPOWER

Kellogg-American



AIR COMPRESSOR PUMPS, ½ TO 20 HP
Engineered and precision built to give more *free air* (actual air delivered) per hp, Kellogg-American compressors assure maximum air delivery, efficiency and service life. Single or two stage, 1, 2 or 4-cylinder units available for pressures up to 200 psi; displacements to 105.9 c. f. m.

COMPLETE AIR COMPRESSORS, ½ TO 20 HP
Portable or stationary; skid, remote tank or tank mounted; electric motor or gas-engine-driven models permit you to select the most efficient, economical compressor for every job. Write Dept. IN-2 for Bulletin K-307.

FREE New slip-stick selector to help determine the right Kellogg-American air compressors for your needs. Send for yours on company letterhead today.

KELLOGG DIVISION
ROCHESTER 9, N. Y.

AMERICAN Brake Shoe COMPANY

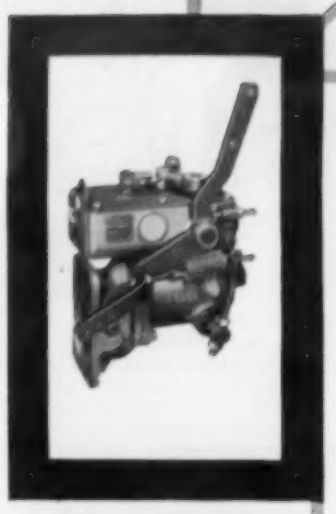
Kellogg-American
½-20 H.P. AIR COMPRESSORS • PAINT SPRAY EQUIPMENT

If you write maker identify as IEN - 6852

high in performance

low in cost

parts & service in the field



PIERCE GOVERNORS

for all Gas and Diesel Engines

Pierce centrifugal governors are your most dependable and efficient control mechanisms for industrial engines . . . from small generator sets to monster power units . . . gas (LPG), gasoline or diesel. For engines requiring extra power to position fuel rack or valve, the Pierce centrifugal with hydraulic booster (for original equipment only) is ideal! Replacement governors and parts are available through your local distributor or fuel injection service station.

For distributor's name or information on special governing problems, write
The PIERCE GOVERNOR Co.
INCORPORATED
1636 Ohio Avenue • Anderson, Indiana

PIERCE — THE MARK OF QUALITY

"SPECIFY PIERCE CENTRIFUGAL GOVERNORS ON YOUR ENGINES"

If you write maker identify as IEN - 6853

There's many a slip...
but it only takes one to cost money!

PABCO GRIP-TREAD MASTIPAVE FLOOR COVERING

Saves Money...Four Ways!

NON-SLIP, SUPER-TOUGH RESILIENT, LOW-COST

These four money-saving ways are why factories, schools, office buildings, hospitals, and Governmental institutions and others specify Pabco Grip-Tread MASTIPAVE...

❶ *Non-Slip* Grip-Tread Mastipave prevents accidents. It's the safe floor with built-in brakes.

❷ *Non-Slip* Grip-Tread Mastipave is super-tough . . . resists wear day-in and day-out. Replacement costs are at a minimum.

❸ *Non-Slip* Grip-Tread Mastipave is resilient, reduces foot fatigue, increases job efficiency.

❹ *Non-Slip* Grip-Tread Mastipave is low cost. Low-cost installation, low-cost maintenance, long wearing qualities. You can't lose—investigate today. Clip the coupon below and learn how you can show a real money value to your company.

FILL OUT THIS COUPON

PABCO PRODUCTS INC.
New York 16 • Chicago 54 • San Francisco 19
(Mail to Dept. B nearest office)

GENTLEMEN: Without cost or obligation to me, please send your folder, "Every Building needs Pabco MASTIPAVE."

NAME _____

ADDRESS _____

CITY _____ STATE _____

If you write maker identify as IEN - 6855

WOOD WORKING . . Radial saw can be carried to a maintenance job

Source: ROCKWELL MFG. CO.
624 N. Lexington Ave., Dept. IEN, Pittsburgh 21, Pa.

For odd jobs

Detachable handles apply under the 22 by 30-in. table of this new 10-in. radial saw so two workers can carry it. The sawing head rides on ball bearing rollers on four hardened trackway rods that can be turned to provide new bearing surfaces.

The saw will cut to 3 in. in depth when set square with a 10-in. blade. It will cross cut 16 in. of 1-in. stock and will rip to the center of a 48-in. panel. It is available with a 1-hp. single-phase motor or a 1½-hp. three-phase motor, both developing a speed of 3,450 rpm. Dado capacity is ⅝ inch. Miter capacity, right or left, is to 90 degrees. Positive stops, both right and left, are at 0, 45 and 90 degrees.

Construction includes a new simplified one-piece retractable blade guard that permits setting to cut 45-deg. bevels without requiring removal. Also the guard does not limit depth of cut for mitering or cut-off.

If you write maker identify as IEN - 6856

REFRIGERATING . . Sub-zero machine to shrink, stabilize, test and store

Source: ALPHA ELECTRIC REFRIGERATION CO.
1115 E. 7-Mile Road, Dept. IEN, Detroit 3, Mich.

About $980

Model 2885 is a new self-contained refrigerating unit in which the 2 cu. ft. work chamber can be set to hold at any temperature between plus 50 deg. F. and minus 100 deg. F. Automatic temperature control is operative to minus 85 deg. F. The work chamber is enclosed in an insulated black enameled housing with stainless steel trim. There is a ½-in. opening in the lid to insert a thermometer or a circulating fan. Four leveling screws are standard equipment on the base. Weight is about 350 pounds. The unit employs a 2-stage compressor. It will pull the temperature down to 100 deg. below zero in an hour.

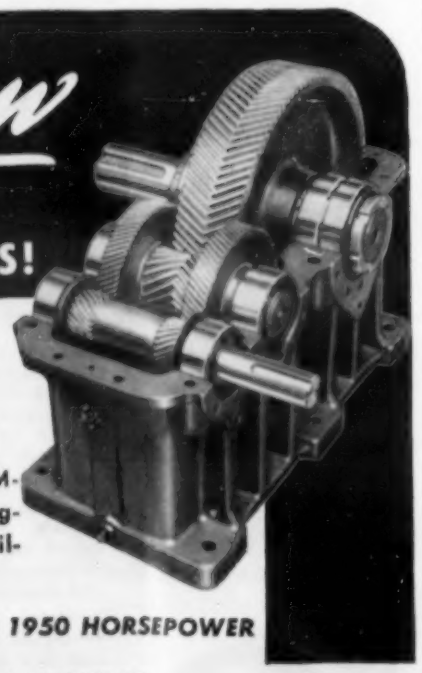
If you write maker identify as IEN - 6857

Don't worry if you run out of fuses of the larger sizes, if you have put in a supply of the new fuse reducers made by Trico Fuse Mfg. Co., 2948 N. 5th St., Dept. IEN, Milwaukee 12, Wis. You can combine standard or dual-element cartridge fuses of smaller sizes than the fuse clips are intended for. Reducers and fuses assemble outside of the fuse box, then are installed as a unit.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6858

New TO CUT YOUR COSTS!



Select the drive that *REALLY FITS* — no larger — no smaller — from the *NEWEST* most *COMPLETE LINE* of Herringbone Reducers Available Anywhere.

CAPACITIES UP TO 1950 HORSEPOWER

W. A. JONES FOUNDRY & MACHINE CO.
4469 Roosevelt Road, Chicago 24, Illinois

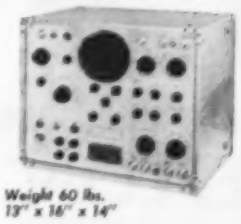
Our NEW Herringbone Speed Reducer Catalog No. 100 is available from your local Jones Representative, or write directly to us. This new approach to speed reducer cataloging is specially designed to help you select with accuracy and confidence the correct Herringbone Gear Drive for your specific application.

Jones *Better Drives ...Since 1890*

If you write maker identify as IEN - 6859

THE LAB PULSESCOPE® BY WATERMAN

MODEL S-5-A



Weight 60 lbs.
13" x 16" x 14"

Video amplifier up to 11 mc . . . Video Delay 0.55 μs . . . Pulse rise and fall time better than 0.07 μs . . . Video sensitivity 0.1v p to p/in. . . Sweep 1.2 μs to 120,000 μs with 10 to 1 sweep expansion . . . Sweep triggered or repetitive . . . internal markers synchronized with sweep from 0.2 μs to 500 ms . . . Trigger generator with output available externally . . . Built in precision amplitude calibrator . . . Combination case . . . Operates on 50 to 1000 cycles at 115V AC.

Another Waterman first, a compact, portable wide band pass laboratory oscilloscope with markers that are triggered in synchronism with the incoming signal. Ideal for pulse measurements, such as shape, amplitude, duration and time displacement. S-5-A LAB PULSESCOPE is adaptable to all kinds of electronic work where knowledge of circuit performance is essential. Built in Video delay permits observation of leading edge of triggering pulse. Precision means of amplitude calibration are provided. Sweep can be either repetitive or trigger with 10 to 1 expansion when desired. Internally generated markers, together with Video calibration, provide quantitative data of amplitude, shape, duration and time displacement of pulses. The oscilloscope thus is truly a PULSESCOPE, another Waterman first.

WATERMAN PRODUCTS CO., INC. PHILADELPHIA 25, PA.
CABLE ADDRESS: POKETSCOPE

WATERMAN PRODUCTS INCLUDE:

S-4-A	SAR	PULSESCOPE
S-5-A	LAB	PULSESCOPE
S-10-B	GENERAL	POCKETSCOPE
S-11-A	INDUSTRIAL	POCKETSCOPE
S-14-A	HIGH GAIN	POCKETSCOPE
S-14-B	WIDE BAND	POCKETSCOPE

Also RAKSCOPES, LINEAR AMPLIFIERS, RAYONIC TUBES and other equipment

WATERMAN PRODUCTS

If you write maker identify as IEN - 6860

New round anode for chromium plating cuts costs

Here's an anode innovation by United Chromium. It has a simple, rugged design that improves operating efficiency and saves money. Here's how:

- Longer service life through less corrosion
- Greater anode activity—gives better current distribution and fewer plating rejects
- Greater rigidity which stops warping

Data sheet LA-2 gives more details. Write.

cut plating plant equipment-costs

WITH TECHNICAL AID

United Chromium plans and supplies specialized equipment for easy operation and economy in plating installations. Technical aid accompanies the line of Unichrome equipment—which includes tanks, blowers, pumps, heaters, filters, anodes and the like.

By taking advantage of United Chromium's unique experience with plating requirements, plating plants assure efficient operations. They also save by avoiding waste of too much capacity, and losses from too little. Requests for quotations are promptly handled.

UNITED CHROMIUM, INCORPORATED

100 East 42nd St., New York 17, N.Y. • Detroit 20, Mich.
Waterbury 20, Conn. • Chicago 4, Ill. • Los Angeles 13, Cal.
In Canada: United Chromium Limited, Toronto 1, Ont.

If you write maker identify as IEN - 6862

LOW COST, RUGGED
Hydraulic
SKID TRUCKS
for loads up to 1000 lbs!

- ★ HYDRAULIC RAISING & LOWERING
- ★ PUSHES OR PULLS
- ★ FLOOR PROTECTIVE WHEELS
- ★ ALL STEEL WELDED CHASSIS
- ★ LIGHT WEIGHT
- ★ COVERED STEEL PLATFORM USED AS PLATFORM TRUCK

● Fully illustrated bulletin HST-19 describes this versatile truck in detail. Write for it today. Catalog GP-17 describing many standard Ironbound cost-saving units will be sent you without obligation, too.

IRONBOUND BOX & LUMBER COMPANY
50 Hoffman Place, Hillside, New Jersey

Ironbound — **IRONBOUND**

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, SKID TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

If you write maker identify as IEN - 6863

Built stronger . . . to serve longer!

ALCO-LITE
TYPE 100
all-aluminum
STEP LADDER

Light, handy Type 100 ladder is one of the strongest step ladders made. Its rigid folding design and extruded alloy aluminum construction provide extra years of trouble-free service. In heights 4′ to 14′, with bucket rest, corrugated 4″ steps and non-slip rubber feet.

Write for complete specifications today . . . and compare ALCO-LITE with any other metal or wooden ladder!

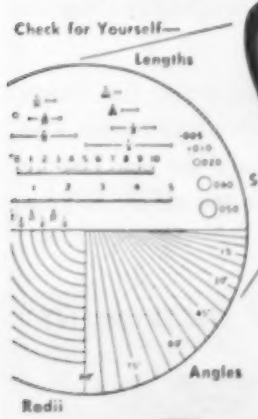
ALCO-LITE ALUMINUM LADDERS
ALUMINUM LADDER COMPANY
100 CARBIS STREET • WORTHINGTON, PENNA.

If you write maker identify as IEN - 6864

MAKE QUICK, ACCURATE MEASUREMENTS
OF SMALL DIMENSIONS

FOR LIMITED TIME
Only $17.50 POSTPAID
COMPLETE WITH GENUINE PIGSKIN CASE
List Price $22.50

Check for Yourself—



Measure and inspect angles, radii, diameters, microscopic lengths directly, easily, with this six-power magnifying comparator. Check wear on cutting tools, dimensions of small parts, etc., without focusing. Size approx. 1½″ x 2″. Highest quality, lowest price. Guaranteed accurate. 15-day free trial. Order today direct or send for complete data. International Development Company, 1 South Reed St., East Riverton, N. J.

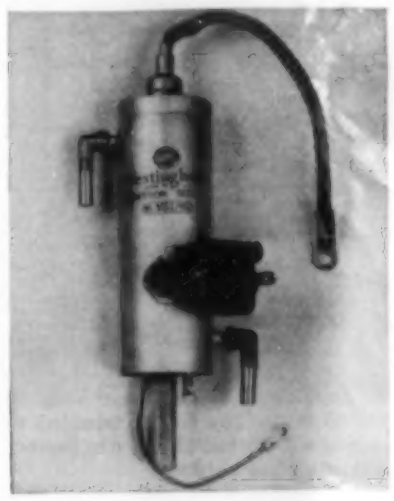
DEALERS INQUIRIES INVITED

INDECO
POCKET COMPARATOR

If you write maker identify as IEN - 6865

WELDING . . Ignitron tube, water cooled with thermostat control

Source: WESTINGHOUSE ELECTRONIC TUBE DIVISION
Box 284, Dept. IEN, Elmira, N. Y.



Cannot over-heat

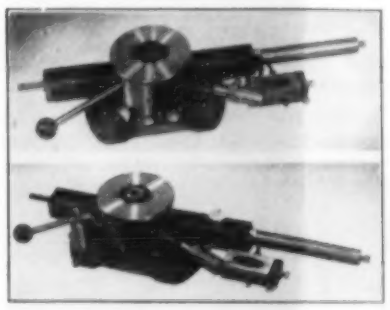
Type WL-5551-A is a new sealed Size-B Ignitron tube of water cooled mercury pool design with a stainless steel jacket. It is intended primarily for resistance welding control. Two tubes, normally used with single phase welders, will control 600 kva. at 250 to 600 volts over a 25 to 60-cycle frequency range.

Water flow is controlled by a thermostat to minimize water consumption and to protect the tube and its associated equipment in the event of water failure. Application can be made in direct replacement of the previously developed standard Model WL-5551. The thermostat is attached to the mount on the side of the tube. It can be connected to stop tube operation, in the event of insufficient water flow, or it can be used with a solenoid operated water valve to turn cooling water on and off as it is needed.

If you write maker identify as IEN - 6866

INDEXING . . Pneumatic fixture to position work on a machine table

Source: G & H MFG. COMPANY
327 Elm St., Dept. IEN, Fitchburg, Mass.



Patents are pending

Air operation for the release and indexing actions of this new fixture can be combined with manual opening and closing of the work collet or with air operated collet action. The fixture can be set up for automatic tie-in with the movements of a machine so the work will be gripped, indexed as required and released, ready for unloading and reloading, without need for attention by the operator.

Body dimensions on the machine table are 12 in. in length, 8 in. in width and 5½ in. in height. Overall length, including the air cylinder to index 180 deg., is 26 inches. The index plate that forms a part of the assembly carries 24 recesses, any of which can be blocked out with screws so they will be skipped in a given cycle. The "stop" recesses and the locating pin are both tapered for accurate positioning at each index position. Collet capacity is ⅛ to 1 3/16 inches. The rotating table measures 10¼ inches. A spring loaded knock-out and a stop can be specified.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6867

NYLOK'S Self-locking THREADED INSERTS

● For use principally in non-ferrous forgings, castings and extrusions

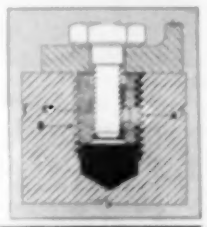
CUT COSTS because NYLOK threaded inserts eliminate counterboring, special tapping and all of the secondary operations required by other threaded inserts. With NYLOK inserts, simply drill and tap with standard tools — then screw the insert in place. They give stronger, tighter fastenings which will permit fewer fastenings per application.

PROTECT PARTS because they eliminate thread failure in expensive castings by absorbing stresses and prevent thread wear and stripping.

DOUBLE LOCK because with the resilient nylon plug, NYLOK inserts provide a smooth, positive locking torque on both internal and external threads, thus locking the insert in the casting and also securely locking the bolt once it has been threaded into the insert.

REQUIRE NO SPECIAL TOOLS for insertion or removal. Permits use of standard screw driver. Simplifies maintenance in the field.

● HOW NYLOK THREADED INSERTS WORK . . .
Resilient nylon plug (A) sets up lateral thrust on both internal and external threads, smoothly wedging mating threads together, both on casting and bolt (B) and (C). There is no galling, no thread distortion, no mutilation of mating threads. All of locking action is on threads and locking is positive. The inserts may be used and reused many times without impairing the locking feature.



THE **NYLOK** Corporation
Manufacturers of Nylon-locked fasteners covered by U. S. patents and patents pending
Offices in: New York City, Detroit, Chicago, North Hollywood
Main Offices and Factory — Elmira Heights, N. Y.

If you write maker identify as IEN - 6868

it's never too early for magnetic protection . . .

PRATER PERMANENT MAGNETS

are recommended for installation — **today** — before uncontrolled tramp iron is allowed to play havoc with your equipment.
PRATER PERMANENT MAGNETS, readily attached to hoppers, spouts or chutes, reach deep into the flow to weed out these destructive metals, increase operating efficiency and safeguard life and property. Each installation is specific as to type, size and arrangement of magnets, as specified by your requirements.
Write for details.

- SINGLE GAP
- DOUBLE GAP
- HEAVY DUTY
- HUMP CHUTE

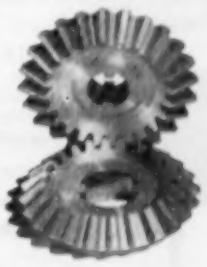
PRATER PULVERIZER COMPANY
1536 S. 55th Court • Chicago 51, Ill.
PRATER

If you write maker identify as IEN - 6869

D.O.James
Established 1888

GEARS For INDUSTRY

SINCE 1888 . . . We have been making many types and sizes of gears for industry. Vast plant facilities of the most modern gear cutting equipment assure capable handling of your *production* or *special* gear requirements.



HELICAL and BEVEL GEARS—From 1″ to 60″ in diameter and from 24 DP to 1½ DP.
SPUR GEARS—Size range from ¾″ to 150″ in diameter. 32 DP to ¾ DP.
HERRINGBONE GEARS—Made from 1″ to 60″ in diameter and from 10 DP to 1½ DP.
SPIRAL BEVEL GEARS—Made from 1″ to 30″ in diam. and 24 DP to 1½ DP.
WORM GEARS — Made from 1″ to 100″ in diam. and from 24 DP to 1 DP.

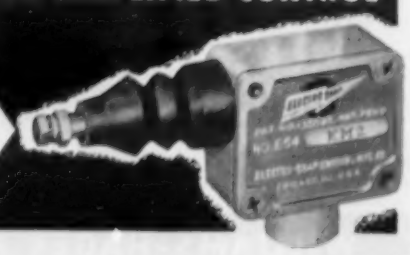
YOUR GEAR INQUIRIES WILL RECEIVE IMMEDIATE ATTENTION
D.O. JAMES GEAR MANUFACTURING COMPANY
1140 W. MONROE ST. • CHICAGO 7, ILL.

If you write maker identify as IEN - 6870

ELECTRO SNAP

ONE WAY
IMPULSE SWITCH
FOR SIMPLIFIED CONTROL

EXCLUSIVE ACTUATOR LETS YOU DO THINGS YOU NEVER COULD BEFORE!



Model ES4-KM2

- **Eliminates Interlocking Switches and Complicated Actuating Dogs**— Ideal for pulsing solenoid valves, air-hydraulic cylinders.
- **Gives More Dependable Operation**— Replaces complicated controls.
- **Lowers Cost of Controls Circuits**— Fewer switches, etc., required.
- **Faster Automatic Operation**— Closer sequencing possible.

Switch rated at 10 amps, 125/250 v. AC. Four models available with overtravel and pulsing strokes from 1/16″ to ⅛″. Write for Data Sheet ESK-6.

see our catalog in 8 PRODUCT DESIGN FILE or write for copy

ELECTRO-SNAP SWITCH AND MFG. CO.
4224 West Lake Street, Chicago 24, Illinois

If you write maker identify as IEN - 6871

Abart
GEARS

CUSTOM-MADE
precision-cut to your order

Abart means fine quality gears . . . in a wide variety of types and sizes . . . all cut to your exact specifications. No stocks are maintained! Abart gears are custom-made in steel, brass, bronze, cast iron, any metal and non-metallic gear material. Precision is assured by Abart finishing equipment which permits shaving gears in pitches from 64 D. P. to 5/7 D. P. Complete Abart facilities assure prompt service, right price—in any quantity.

Send B/P and specifications or samples for quotation. Specify material and nature of work.

ABART GEAR and MACHINE CO.
4823 WEST 16TH STREET • CHICAGO 50, ILLINOIS
Manufacturers of Gears, Speed Reducers and Gearmotors

If you write maker identify as IEN - 6872

In shelving it's the erected cost that counts!

De Luxe steel shelving costs less

- Easy to Install
- 100% Adjustable
- Fewer Parts
- Easier to Adjust
- 80% Less Bolts
- Precision Made

A De Luxe factory representative is near you, ready to give you complete engineering, planning and layout service, without obligation. Write today for free catalog.

DE LUXE METAL FURNITURE CO. *DeLuxe*
303 Struthers Street, Warren, Pa.
For over 25 Years Manufacturers of: Storage Shelving
Library Shelving • Storage Cabinets • Shop Equipment

If you write maker identify as IEN - 6873

WRITE *for your copy of this Bulletin!* for complete data on

WILLIAMS-HAGER FLANGED *Silent* CHECK VALVES

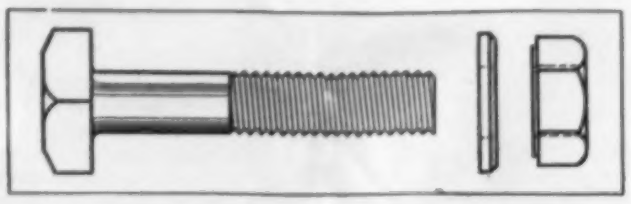
Williams-Hager check valves provide economy with silent operation in all types of piping systems installed in public buildings, utilities, waterworks, industrial plants, oil refineries, paper mills, chemical plants, hospitals and other buildings. Send for complete details contained in Bulletin 654.

THE WILLIAMS GAUGE CO., INC.
2900 Pennsylvania Ave., Pittsburgh 33, Pa.

If you write maker identify as IEN - 6874

FASTENING . . Bolster bolt to secure bolster plate on a press bed

Source: WEST POINT MFG. CO.
26935 W. 7-Mile Road, Dept. IEN, Detroit 19, Mich.



Larger sizes as specified

Length under the head of this new bolster bolt ranges from 4 to 22 inches. Shank diameter is 1¼ inches. Thread length is 3¾ inches. The bolt is made of SAE 4140 steel or its equivalent. A hardened nut and a steel washer, similarly hardened, complete an assembly.

List price ranges from $2.95 to $5.65. The nut adds 50 cents and the washer adds 60 cents. The bolt is intended to secure a bolster plate firmly to a press bed in order to protect dies against damage due to the plate shifting.

If you write maker identify as IEN - 6875

CORROSION PROOFING . . Kraft paper chemically treated for packaging use

Source: NOX-RUST CHEMICAL CORP.
333 N. Michigan Ave., Dept. IEN, Chicago 1, Ill.

Protects dry work parts immediately

Instant Acting designates new development in the company's Vapor Wrapper corrosion proofing packaging paper in which a chemical, impregnated into the paper, emits a protective vapor that prevents corrosion. The new material eliminates the interim period, before sufficient vapor forms inside a completed package, to protect the packaged parts. At the same time, its instant action does not affect the paper's long-life protective properties.

If you write maker identify as IEN - 6876

Illustrated is a new special tool board, manufactured by Scully-Jones & Co., 1901 S. Rockwell St., Dept. IEN, Chicago

18, Ill., to mount a complete set of 56 sharpened drills and reamers ready to replace broken or worn tools in a Footburt 6-station drilling machine. Each tool is graphically identified by size, station, tool number and adapter. Production was increased by 63 additional parts each 8-hr. shift, following installation of the board.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 6877

FULLY AUTOMATIC LOADER!

LOAD-O-MATIC*

The **LOAD-O-MATIC*** is a new, revolutionary loading platform which automatically carries loads from loading dock to truck floor, whether truck is above or below dock. Can also be installed at ground level. Motion controlled by switch bar in platform and by self-leveling ramp. Completely automatic! Human element eliminated! It's the loader with the mechanical brain. Models 6000 to 20,000 lbs. Write for descriptive literature. *Pat. App. for

FIELD ENGINEERING CO. 66 FOOTE AVENUE JAMESTOWN, N. Y.

If you write maker identify as IEN - 6878

jari (Self-Propelled) POWER SCYTHE
does the work of 8 men

- Works on rough ground.
- Cuts under fences up to buildings, etc.
- Cuts heaviest growth.
- SAFE: will not throw objects—will not cut operator's foot.
- Lightweight, easy to operate, self-propelled.

One man will cut several acres of heavy growth per day with a Jari. Large wheels designed for heavy cutting over rough areas. It has been adopted by many highway and maintenance departments for its rugged dependable work.

CUTS WEEDS TALL GRASS BRUSH

3 MODELS

JARI SR.: A single purpose machine for heavy cutting on rough, hilly ground. Self-propelled.

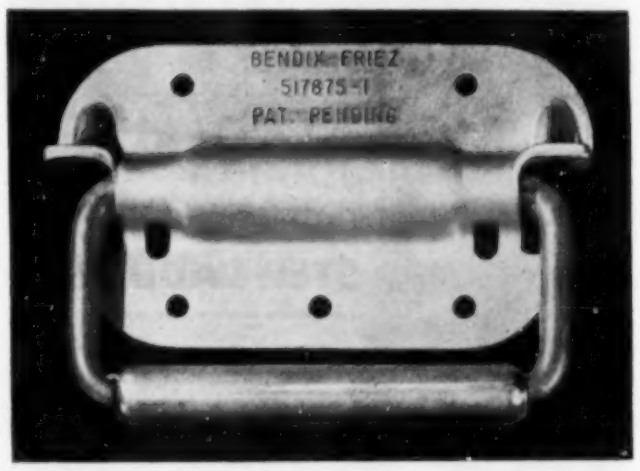
JARI CHAMPION: Self-Propelled—Summer and winter application with attachments for plowing snow, reel cutting, weed spraying.

JARI JR.: Self-Propelled—Versatile 4 attachment machine for heavy cutting, weed spraying, snow plowing.

EXTRA ATTACHMENTS *Write for Bulletin*

jari PRODUCTS, INC.
2938-J PILLSBURY AVENUE • MINNEAPOLIS 8, MINNESOTA

If you write maker identify as IEN - 6879



A RUST-PROOF HANDLE!

We call it to the attention of manufacturers of portable equipment . . . carrying cases, parts, boxes or anything that has to be lifted or carried.

It can be riveted or welded to any kind of container. It can be depressed in the surface if you want.

Ruggedly built of aluminum and stainless steel, it is rust proof and rattle proof. It withstands shocks and vibrations. It has a patented "snap-back" feature.

If you've got something that's to be lifted by handles . . . chances are this Bendix-Friez handle is better for you.

It meets military requirements for many specialized equipment uses. Manufacturers who have used them . . . call them, the best handle by far. No order too large or too small. Prompt attention. Write today.

BENDIX FRIEZ
FRIEZ INSTRUMENT
Division of Bendix Aviation Corporation
1428 Taylor Ave., Balto. 4, Md.
EXPORT SALES
Bendix International Division
205 E.42nd St., New York 17, N.Y. U.S.A.

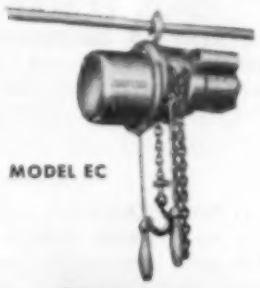
If you write maker identify as IEN - 6881

CHESTER *Electric* HOISTS

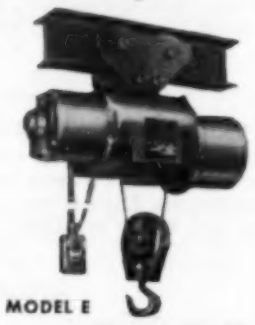
Make heavy handling jobs easier!

Now, an outstanding new line of Chester Electric Hoists is available to help you put more heavy handling jobs on a paying basis in your plant.

Ask your distributor for complete information on the new Chester Electric Hoists, or write us for specification folders, E 853 and EC 953.



MODEL EC



MODEL E

Remember Chester, too, for the complete line of Spur Geared Hand Chain Hoists and Overhead I-Beam Trolleys. ¼ to 25 ton. Ask for Catalog.

MODEL EC: 3 sizes, ¼ to 1 ton. Welded alloy steel link chain, pendent rope control. Lifts adaptable up to 66 ft.

MODEL E: 5 sizes, ¼ to 2 ton. Flexible wire rope-cable lift, pendent push button control. Lifting speeds 15 to 30 f.p.m.

National PRODUCTS

CHESTER HOIST DIVISION
The National Screw & Mfg. Company
Lisbon, Ohio

If you write maker identify as IEN - 6882

Your BEST Buy ...regardless of price!

WITT

CANS and PAILS

WITT CANS and PAILS are designed and constructed to give you more service for your dollar. They withstand years of hard usage and abuse which wreck the ordinary container. Many WITT CANS and PAILS are still in excellent condition after 10, 15, yes even 20 years or more service. They're guaranteed to outlast 3 to 5 of the ordinary kind. Regardless of price, you get more for your dollar. Buy a WITT!

Compare WITT CAN and PAIL features with others on these points . . .

- **STRAIGHT SIDES**
- **HEAVY GAUGE STEEL**
- **STRUCTURAL STEEL BANDS**
- **HOT DIP GALVANIZING**
- **PINCH-PROOF HANDLES**
- **STURDY LID**
- **DEEP ROLLING CORRUGATIONS**

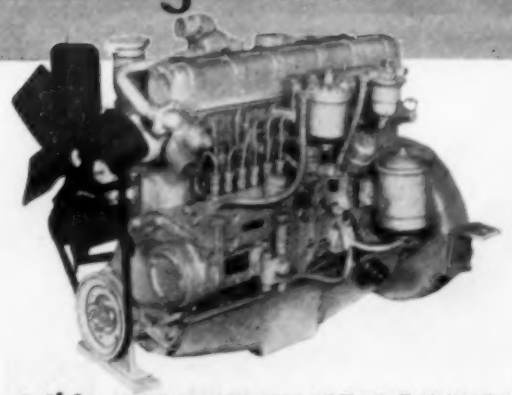
Witt Cans "Originators of the Corrugated Can"

WITT CANS HAVE THE "RIGHT" ANGLE

THE WITT CORNICE COMPANY, 2133 WINCHELL AVE., CINCINNATI 14, OHIO

If you write maker identify as IEN - 6883

most rugged power plant of any fork lift!



Get this new facts book

Big, powerful, rugged! That's Buda's extra-heavy duty engine built for tough, industrial duty. Users report 4,000 hours before overhaul! More rugged connecting rods, crankshafts, larger timing gears! Buda engines, gasoline and diesel, are best by far! Get all the data about Buda Fork Lifts. New book tells about 85% parts interchangeability, 36 pages of vital information that means faster, less costly materials handling in your plant.

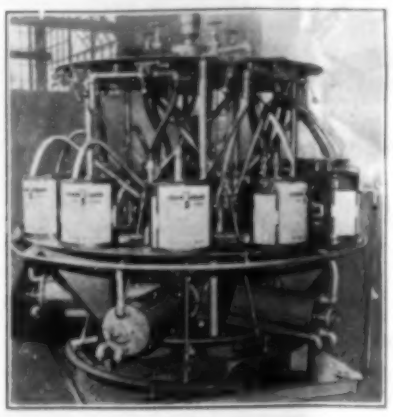
BUDA

THE BUDA COMPANY • Harvey, Illinois
A Division of Allis-Chalmers Manufacturing Co.

If you write maker identify as IEN - 6884

PACKAGING . . Filling machine delivers liquid into five gallon cans

Source: DRUM EQUIPMENT CORP.
945 Lehigh Ave., Dept. IEN, Union, N. J.



Drum Rotary Filler

Liquid is delivered to the top center of this new rotary table machine from a storage supply. It flows through pipe lines to positive displacement cylinders beneath the main container-carrying table. The assembly rotates at a continuous slow speed above a base carrying a stationary cam ring. This ring actuates pivoted followers connecting to fill pipes to raise the pipes or to lower them into the openings of cans placed on the table by the operator. Liquid is delivered positively by the cylinders when the pipes are in "fill" position. It cuts off when they are raised.

Each of the ten stations is adjustable to 5 gal. plus or minus a pint. Accuracy of each delivery is within 1 cubic inch. The machine occupies a floor space of about 50 square feet. It is driven by a ½-hp. 110-volt ac. motor. An automatic safety cutoff is provided but all motion can be arrested by gripping a hand rail surrounding the container table. The machine has capacity to fill 1,000 cans in 2½ hours. This represents a carload. Three men are required for a carload job.

If you write maker identify as IEN - 6885

PROTECTING . . Catalytic muffler to burn diesel engine exhaust fumes

Source: OXY-CATALYST INCORPORATED
392 Lancaster Ave., Dept. IEN, Wayne, Pa.

Built to order

Dieseler trade names a new catalytic muffler for use on a four-cycle diesel engine exhaust. It attaches to the engine exhaust manifold and burns the noxious carbon monoxide fumes and the odorous hydrocarbon fumes by catalytic action. It eliminates a major part of the heavy smoke and strong odor that comes from diesel truck and bus operation. It permits use of the four cycle diesel engine in enclosed plant areas.

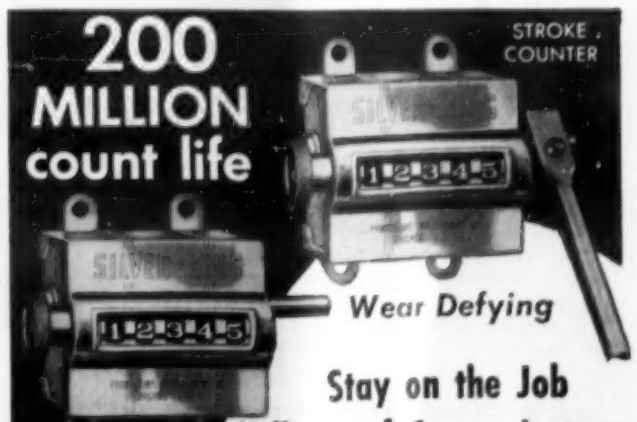
The new unit represents further development of the muffler for use on gasoline engines, previously described IEN-11510-50. It is available in specified capacities. Overall dimensions of the assembly illustrated, for a 65-hp. engine, are 7 by 12 by 27 inches.

Each catalytic unit is a porcelain structure containing 73 porcelain rods coated with the catalytic agent, alumina and platinum alloy. Hot engine gases, flowing across these rods, are catalytically burned to carbon dioxide and water vapor.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6886

200 MILLION count life



Wear Defying

REVOLUTION COUNTER
Accurate at speeds to 4000 R.P.M.

Complete Catalog mailed on request.

Stay on the Job Millions of Counts Longer

Increased dependability. Greater long run accuracy. Reduced upkeep costs. No wonder progressive cost-conscious plants are switching to Silver Kings.

Built rugged as a bulldozer, Silver Kings operate smooth as a watch. Extra heavy shaft, oversize bearings, life tested parts, all-steel housing, chrome plated finish.

Available in Stroke and Revolution types, top-coming or top-going action, 5 or 7 digits, right or left shaft, knob or key reset.

SEE—COMPARE—TEST. Ask your PIC Representative or write.

PRODUCTION INSTRUMENT COMPANY
700-10 W. Jackson Blvd., Chicago 6, Ill.

If you write maker identify as IEN - 6887

ENGRAVE

NAME PLATES • PANELS • DIALS

in your own shop

Lowest set-up time for unskilled labor

CALIBRATIONS | PROFILES | CURVED SURFACES

10,000 IN USE **Accepted by all leading manufacturers as the speediest, most versatile portable engraver. Only the NEW HERMES has these patented features:**

- **Adjustable for 15 ratios.**
- **Self-centering holding vise.**
- **Automatic depth regulator.**
- **Adjustable copy holders.**

Send direct to us for booklet IM 23

NEW HERMES ENGRAVING MACHINE CORP.
13-19 University Place • New York 3, N. Y.

If you write maker identify as IEN - 6888

The new M·S·A SHOCKGARD

does a double protection job!

The only Safety Work Hat designed especially for Linemen and Electrical Construction Workers. *No metal* in shell or lining. Molded entirely of special thermoplastic, the Shockgard sets up an effective guard against a minimum of 10,000 volts, which holds at temperatures of 30 degrees below zero to plus 175 degrees F. High resistance to impact, penetration. Streamlined; lightweight; comfortable; easily adjusted lining. Winter lining and chin straps available. Bulletin 0601-1.

MSA SAFETY EQUIPMENT HEADQUARTERS

MINE SAFETY APPLIANCES COMPANY
Braddock, Thomas & Meade Sts.
Pittsburgh 8, Pennsylvania
At Your Service: 68 Branch Offices in the United States

If you write maker identify as IEN - 6889

BREEZE *Job-Engineered* BELLOWS

ANOTHER BREEZE MARK PRODUCT

...Give LASTING PROTECTION Where Ordinary Bellows Fail

Breeze welded diaphragm bellows meet the operating life cycle of any equipment in which they are used *because every Breeze bellows design is individually engineered and built for the job.*

Breeze has no "stock bellows," but if you have a vibration problem in ducts, large or small, or want permanently sealed valve enclosures in any type of piping system, or need bellows for torque transmission or other uses, Breeze experience can quickly provide the answer . . . and production can meet your requirements.

A Breeze bellows is dependable because each diaphragm is designed to work well within its elastic limit. This is accomplished by thorough analysis of each application and careful design of the bellows to withstand all requirements. "Job engineering" each individual type eliminates makeshifts, assures efficient performance.

Breeze bellows are made in stainless steel, inconel, monel, nickel, steel, or other weldable alloys.

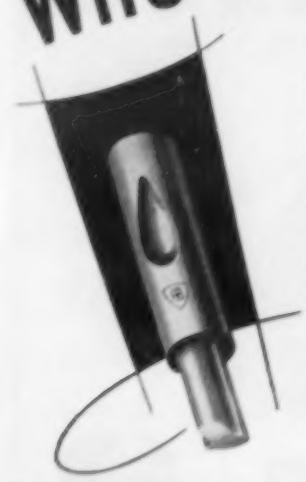
Feel free to consult us without obligation on your existing bellows requirements, or any other project where reliable welded diaphragm type bellows might solve a design problem.

BREEZE CORPORATIONS, INC.
700 Liberty Ave., Union, N. J.

OTHER BREEZE PRODUCTS: ACTUATORS · RADIO SHIELDING · AERO-SEAL HOSE CLAMPS

If you write maker identify as IEN - 6890

WHO USES R-B PUNCHES



Through many years of providing America's leading industries with interchangeable and standardized punches, die buttons and retainers, R-B has built a reputation for increasing production, lowering costs and saving time. R-B case histories of savings and benefits include users of cam actuated, multi-station progressive, forming, blanking, piercing, embossing and combination dies of all sizes and types.

Use R-B Engineering Service for Your Tough Piercing Problems.

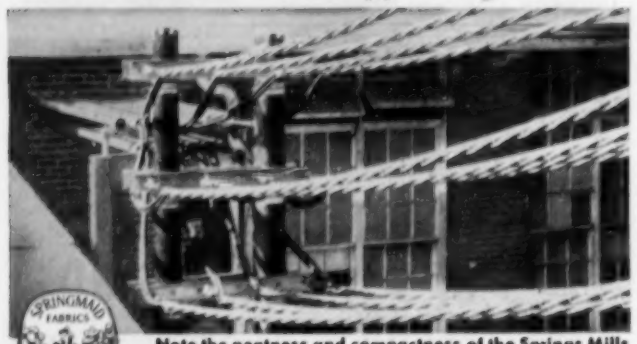
Why don't you investigate the cost saving features of R-B equipment?

RICHARD BROTHERS PUNCH DIVISION
ALLIED PRODUCTS CORPORATION
DEPT. 77 • 12615 BURT ROAD • DETROIT 23, MICH.

Also Produced in OTHER ALLIED PLANTS
SPECIAL COLD FORGED PARTS • STANDARD CAP SCREWS
PRECISION GROUND PARTS • SHEET METAL DIES MADE OF FERROUS ALLOYS, ZINC ALLOYS OR PLASTICS

If you write maker identify as IEN - 6891

SPRINGS MILLS selects HAZARD self-supporting cable



Note the neatness and compactness of the Springs Mills installation. Cables are readily accessible for splicing.

For safe transmission of large blocks of power in limited spaces, Springs Mills selected Hazard self-supporting cable. This is the modern method of power distribution—providing safety, ease of installation and neat appearance at minimum cost.

Hazard self-supporting cable is insulated with Watertite heat- and moisture-resistant insulation and protected by a rugged Hazaprene ZBF sheath. Together they give maximum resistance to the destructive conditions common to industrial installations. Get complete information from your Hazard representative or write Hazard Insulated Wire Works, Division of The Okonite Company, Wilkes-Barre, Pennsylvania.

HAZARD *insulated cables*

1644

If you write maker identify as IEN - 6892

NEW!

ISLAND PALLET DOLLIES

HANDLE WITH EASE

cut Loading Time in half

TAKE over where fork trucks leave off . . . at the Truck or freightcar door. Island Pallet Dollies have staggered bottom rollers to eliminate trouble from floor racks. Built to handle *your* pallets. All parts are standard equipment. Write for Bulletin RTD-1A. Dept. IEN6.

Additional Allied Equipment available
Advise us of your problem

ISLAND EQUIPMENT CORP.
27-01 Bridge Plaza North
Long Island City 1, N. Y.

NEW LITERATURE

If you write maker identify as IEN - 0528

ADHESIVES . . Also coating and sealing materials, are listed in 12-sheet pocket booklet Z-AIF No. 6 against the military and other specifications to which they apply. There is a specification cross reference. Minnesota Mining & Mfg. Co., 423 Piquette Ave., Dept. IEN, Detroit 2, Mich.

If you write maker identify as IEN - 0529

ALLOYS . . Available in cast form for heat and corrosion-resistant service, summarized as to properties and uses in revised 48-page booklet, "Heat Resistant and Corrosion Resistant Alloy Castings in Industry". International Nickel Co., 67 Wall St., Dept. IEN, New York 5, N. Y.

If you write maker identify as IEN - 0530

BURRING . . Granular chips, not sharp slivers, are produced by Kellerflex carbide burs. Twenty-page Catalog 564 shows 12 standard shapes, gives sizes, examples of use, application suggestions. Pratt & Whitney, Charter Oak Blvd., Dept. IEN, West Hartford 1, Conn.

If you write maker identify as IEN - 0531

BATTERIES . . Eveready batteries for portable electronic equipment include "A" and "B" types, combination units, in a range from 1.5 to 510 volts. Specification chart and connection diagrams in 4-page Battery Engineering Bulletin 1, revised edition. National Carbon Div., Union Carbide & Carbon Corp., 30 E. 42nd St., Dept. IEN, New York 17, N. Y.

If you write maker identify as IEN - 0532

ROLLER BEARINGS . . Barrel bearing is a self-aligning radial and thrust bearing intended for use where misalignment may exist. Catalog B-154, 52 pages, describes what bearing ratings mean, has selection tables. Hyatt Bearings Div., General Motors Corp., Dept. IEN, Harrison, N. J.

If you write maker identify as IEN - 0533

METAL BELLOWS . . "Design Guide", 20-page Catalog 140, has a 22½ by 17½-in. chart on vapor pressure-temperature curves of materials from carbon dioxide to xylene. It gives data on bellows of brass, Monel, stainless steel. Flexonics Corp., 1333 S. Third Ave., Dept. IEN, Maywood, Ill.

If you write maker identify as IEN - 0534

BENDING . . Press brakes in six series with capacity to 12 ft. in ¼-in. mild steel are presented in 16-page Catalog 908 along with operations performed. Airtherm Mfg. Co., 752 S. Spring Ave., Dept. IEN, St. Louis 10, Mo.

If you write maker identify as IEN - 0535

BENDING . . Hydraulic press of 20-ton rating is designed and tooled to make multiple bends in pipe and tube to 2 in. od. by .083-in. wall. "Tube Bending Press", 4 pages. Pines Engineering Co., 600 Walnut St., Dept. IEN, Aurora, Ill.

If you write maker identify as IEN - 0536

STORAGE CABINETS . . Transparent-plastic drawers in the Haz-Bin steel cabinet enable you to see their contents. List prices and a demonstration of how much one will hold are shown in 16-page bulletin, "End Mis-Placed-Itis". Akro-Mils, Inc., Box 989, Dept. IEN, Akron 9, Ohio

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 0537

ELECTRIC CABLE . . Cord and plug sets for appliances, power tools, heavy service, refrigeration harnesses. Catalog, 32 pages, carries dimension drawings of caps, connectors, strain reliefs. Cords Ltd., Dept. IEN, De Kalb, Ill.

If you write maker identify as IEN - 0538

STAINLESS CASTINGS . . "Alloy Reference Chart" on 28 cast stainless steels lists analyses, physical properties, recommended uses, designations. Cooper Alloy Foundry Co., 212 Bloy St., Dept. IEN, Hillside 5, N. J.

If you write maker identify as IEN - 0539

FLOOR CLEANING . . Machine applies cleaning material to a floor, scrubs it with a brush, flush-rinses if required, then picks removed dirt and liquid. It also can dry scrub or polish. Data sheets 213P, 418P, 218G, in a set of three. Finnell System Inc., Dept. IEN, Elkhart, Ind.

If you write maker identify as IEN - 0540

OVER RUNNING CLUTCH . . Miniature free-wheeling clutch permits drive in one direction only. It comes in shaft-equipped design or as a cartridge to insert into a product or mechanism. Dimensions in 4-page Bulletin B-54. Miniclutch Co., 379 Morse St., Dept. IEN, Hamden, Conn.

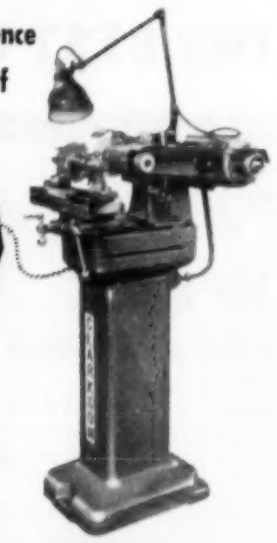
If you write maker identify as IEN - 0541

FLOW CONTROL . . Self-contained unit mounts in a pipe line, regulates flow in accordance with a dial setting, using energy derived from the fluid stream to operate its mechanism. Catalog 10-F-70, 4 pages. Fischer & Porter Co., 49 Jacksonville Road, Dept. IEN, Hatboro, Pa.

If you write maker identify as IEN - 6894

Backed By Years of Experience in the MANUFACTURE of CUTTING TOOLS...

THE CLARKSON CUTTER GRINDER



Simplicity . . . Speed . . . Economy are featured in the Clarkson Cutter Grinder . . . *designed specifically for use in the manufacture of Clarkson Milling Cutters.* All of the desirable features recognized as essential through years of experience, to the manufacture of cutting tools are incorporated into the Clarkson Cutter Grinder, yet it is low in cost, right for use in your plant for resharpening. Write today for FULL INFORMATION on the Clarkson Cutter Grinder.

★ END MILLS
★ SLOT DRILLS
★ REAMERS
★ WOODRUFF CUTTERS
★ T-SLOT CUTTERS
★ COUNTERBORES
★ COUNTERSINKS
★ SPOT FACING CUTTERS
★ SIDE & FACE CUTTERS
★ CYLINDRICAL CUTTERS
★ FACE MILLS
★ ANGLE CUTTERS
★ and HOLLOW MILLS

Exclusive Distributorships Open

KNOWN AND PREFERRED THE WORLD OVER

Clarkson INCORPORATED

DEDLOCK CHUCKS • AUTOLOCK CHUCKS • MILLING CUTTERS • CLARKSON CUTTER GRINDERS

320 Ontario St., Toledo, Ohio

If you write maker identify as IEN - 6893

MILTON ROY CONTROLLED VOLUME PUMP CUTS PRODUCTION TIME 50%

• "miniPump"—miniature member of Milton Roy Controlled Volume Pumps, was installed in a plant process operation. It replaced a costly manual process in the pumping of *one tenth of a milliliter* (1/300 of an ounce) of liquid into open cells on each stroke of the pump. The conversion to automatic continuous injection cut production time 50%—and gave greater accuracy!

These versatile instruments meter any clear liquid in capacities from 3 to 3200 milliliters per hour against pressures up to 1000 pounds per square inch.

Applications for the pump are varied—ranging from laboratory and pilot plant use to full-scale production operations. They are used as individual units or as components of instrumentation or automatic control systems.

New Bulletin No. 653 illustrates and describes "miniPump"—its design—construction—uses. Write today for your free copy!

MILTON ROY COMPANY
1302 E. MERMAID LANE • PHILADELPHIA 18, PA.

If you write maker identify as IEN - 6895

Metal hose variety!

Consult PACKLESS on your flexible metal hose requirements — a complete line stocked for every industrial need — Bronze, Stainless steel and Carbon steel available for high or low temperature usage. Fittings are soldered, brazed, welded, or mechanically applied. Write for industrial folder.

PACKLESS METAL HOSE INC.
31-40 WINTHROP AVE. • NEW ROCHELLE, N. Y.

If you write maker identify as **IEN - 0542**

LIQUID LEVEL CONTROL . . No floats are required for the company's electric control. Instead a set of electrodes and an induction relay control level to ¼ inch. Sixteen application diagrams in 36-page 1954 Catalog. B/W Controller Corp., 2200 E. Maple Road, Dept. IEN, Birmingham, Mich.

If you write maker identify as **IEN - 0543**

POSITION CONTROLS . . Flexible-shaft remote control to position equipment by push or pull, also a control box that employs a rack-and-pinion action. Bulletin 500, 16 pages, shows a variety of application suggestions. Teleflex Inc., 125 S. Main St., Dept. IEN, North Wales, Pa.

If you write maker identify as **IEN - 0544**

PRODUCTION CONTROL . . Visible-chart method of machine loading with the company's Sched-U-Graph is described in 6-page Bulletin KD-738 by an example. It covers both rough loading by machine group and fine loading by the individual machine. Remington Rand Inc., 315 Fourth Ave., Dept. IEN, New York 10, N. Y.

If you write maker identify as **IEN - 0545**

CONVEYOR BELTS . . Iron ore to cartons is the range of products handled on the company's rubber-fabric belts. Looseleaf catalog, "Conveyor Belting", 30 pages. Hamilton Rubber Mfg. Co., Box 361, Dept. IEN, Trenton 3, N. J.

If you write maker identify as **IEN - 0546**

OVERHEAD CONVEYOR . . Package assemb'y of No. 460 overhead chain conveyor includes drive unit, takeup, lubricator, straight and curved track, track mounts, work carriers. Catalog A-96, 16 pages, shows components, presents layouts. Richards-Wilcox Mfg. Co., Dept. IEN, Aurora, Ill.

If you write maker identify as **IEN - 6896**

Handy extensions simplify the job of Tornado-cleaning this recently smoke-blackened wall at American Cholesterol Products, Inc.

Make a BREEZE Out of Plant Cleaning

with a 300 M.P.H. TORNADO®

Detached from its base, the Tornado becomes a portable Pac-Vac — superb for cleaning hard-to-reach areas.

American Cholesterol Products in Milltown, New Jersey, maintains laboratory cleanliness in their pharmaceutical plant with a Tornado vacuum cleaner. Their Tornado makes a breeze out of such tedious jobs as cleaning soot ladened walls, and creates no sooty mess during the process.

Cleaning of chemical tanks and equipment is simplified with the handy Tornado Pac-Vac. Detached from the vacuum tank, Tornado becomes a highly portable pack-carried vacuum cleaner. Slung from a comfortable harness, the Pac-Vac makes it possible for your maintenance men to climb scaffolds and crawl behind equipment to vacuum or blow dirt from areas normally inaccessible.

The 300 m.p.h. vacuum of Tornado can make a breeze out of your floor and machinery cleaning, furnace and heater maintenance, and a hundred other jobs around shop and office. Tornado picks up wet and dry materials without conversion. Find out how a relatively small investment in a Tornado can pay big dividends for you by speeding plant maintenance and boosting employee efficiency.

WRITE FOR BULLETIN 600

BREUER ELECTRIC MFG. CO.

5108 North Ravenswood Avenue • Chicago 40, Illinois

NEW LITERATURE—*Continued*

If you write maker identify as **IEN - 0547**

COOLING . . Aero heat exchanger cools or controls temperature of engine jacket water, lubricating oil, heat-treating fluids. It uses air as the cooling medium by evaporating a water spray. Bulletin 20, 4 pages. Niagara Blower Co., 3117 Chrysler Bldg., Dept. IEN, New York 17, N. Y.

If you write maker identify as **IEN - 0548**

COUNTING . . Instruments record pulses, time intervals, revolutions on paper tape with figures $\frac{3}{16}$ in. high. "Printing Instruments", 4 pages. Streeter-Amet Co., 4140 Ravenswood Ave., Dept. IEN, Chicago 13, Ill.

If you write maker identify as **IEN - 0549**

OVERHEAD CRANES . . Shop models to 15 ton capacity in four standard sizes to suit headroom requirements or other conditions. Bulletin 6-B, 12 pages. Abell-Howe Co., 53 W. Jackson Blvd., Dept. IEN, Chicago 4, Ill.

If you write maker identify as **IEN - 0550**

POWER CYLINDERS . . Data sheets in Bulletin 103 show semi-standard cylinders such as a duplex unit, combination pneumatic and hydraulic unit, tandem unit. Ortman-Miller Machine Co., 1222 150th St., Dept. IEN, Hammond, Ind.

If you write maker identify as **IEN - 0551**

POWER CYLINDERS . . Sixteen pneumatic cylinders from 1½ to 10 in., 16 hydraulic models from 1½ to 5 in. for 500-lb. service, 15 models from 1½ to 6 in. for 1,500-lb. hydraulic service. Looseleaf catalog, 32 pages. Petch Mfg. Co., 463 York, Dept. IEN, Detroit 2, Mich.

If you write maker identify as **IEN - 0552**

DRILL BUSHINGS . . Use thin sheet metal or laminated plastic as the base for drill jigs, urges 20-page catalog, and equip the base with Anchor bushings. It tells how to do installation steps, make changes. Hi-Shear Rivet Tool Co., 8924 Bellanca Ave., Dept. IEN, Los Angeles 45, Calif.

If you write maker identify as **IEN - 0553**

DRILLING HEAD . . Quill-type hydraulic power unit features compact design for single or multiple assembly in a production machine, together with 8 and 12-in. spindle travel. Bulletin B-45040, 4 pages. Ex-Cell-O Corp., 1200 Oakman Blvd., Dept. IEN, Detroit 32, Mich.

If you write maker identify as **IEN - 0554**

DRIVE CHAIN . . Book 2425 has 92 pages of information on silent chain drives including stock assemblies, selection tables, design factors, drive arrangements, components and accessories, maintenance and lubrication. Link-Belt Co., 307 N. Michigan Ave., Dept. IEN, Chicago 1, Ill.

If you write maker identify as **IEN - 0555**

VARIABLE SPEED DRIVE . . Variable-pitch sheaves, a V-belt and tilting motor base to use with them, adjustable motor bases, and Select-O-Speed fixed-center transmissions for ⅛ to 5 hp. Catalog 118, 24 pages. Lovejoy Flexible Coupling Co., 4814 W. Lake St., Dept. IEN, Chicago 44, Ill.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6898**

Try Them Free!

KEPS® TESTING SAMPLES

See how this amazing new Shakeproof fastening saves assembly time and assures vibration protection. A SHAKEPROOF® Lock Washer of the right size and type is pre-assembled on each nut . . . only one unit to handle . . . the lock washer can't drop off . . . every nut is certain to be locked tight.

SEND FOR YOUR FREE KIT OF KEPS TESTING SAMPLES TODAY!

SHAKEPROOF®

"Fastening Headquarters"

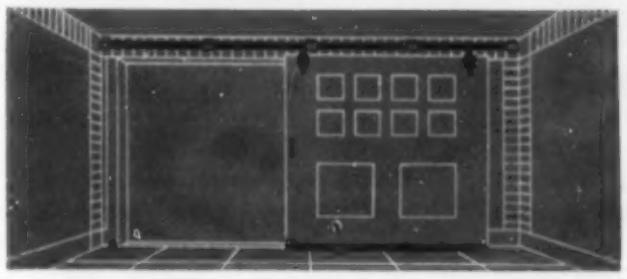
Division of Illinois Tool Works
St. Charles Road, Elgin, Illinois

If you write maker identify as **IEN - 6899**

COBURN

SLIDING DOOR HARDWARE

smooth, easy operation . . . trouble-free life for both new and remodeling jobs



For additional information, write to Sales & Engineering, 56 Sterling Street, Clinton, Mass. or consult your classified telephone directory.

THE COLORADO FUEL AND IRON CORPORATION—Denver and Oakland
WICKWIRE SPENCER STEEL DIVISION—Atlanta • Boston • Buffalo
Chicago • Detroit • New Orleans • New York • Philadelphia

2007

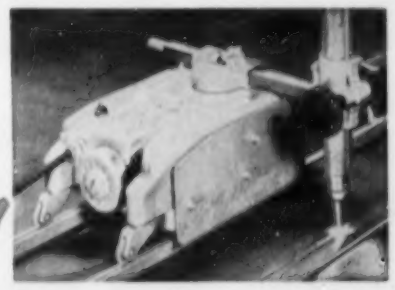
COBURN PRODUCTS

PRODUCTS OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as **IEN - 6900**

SAVE TIME AND MONEY with this

OXWELD Trade-Mark **MACHINE CARRIAGE**



Here is a new lightweight machine carriage—the OXWELD CM-45—that will mechanize literally dozens of oxy-acetylene jobs in large or small metalworking shops, and do them better than the most skilled hands.

You save money when you let the CM-45 do your cutting, beveling, flame-treating, or special welding jobs. Its efficient operation saves oxygen and acetylene as well as time, and rejects are reduced to a minimum.

For further information, call your nearest LINDE representative today. Ask for a free copy of Form 7839. No obligation.

LINDE AIR PRODUCTS COMPANY

A Division of Union Carbide and Carbon Corporation

30 E. 42nd St., New York 17, N.Y. Offices in Other Principal Cities

In Canada: Dominion Oxygen Company, Limited, Toronto

"Oxweld" is a trade-mark of Union Carbide and Carbon Corporation.

If you write maker identify as **IEN - 6901**

Saved BY THE BELL!

. . . because your Watchman was ALERT to sound the alarm!

The Detex GUARDSMAN Watchclock keeps your Watchman alert . . . by giving you unbroken mechanical supervision of his activities night and day—weekends and holidays.

Write for free folder.

DETEX WATCHMENS CLOCKS

PATROL
ALERT
ECO
NEWMAN
GUARDSMAN

DETEX WATCHCLOCK CORPORATION
Dept. E-6
76 VARICK STREET, NEW YORK 13, N. Y.
Sales and Service in All Principal Cities

If you write maker identify as IEN - 6902

Jenkins cast steel Valves

. . . for dependable economy in higher pressure — higher temperature services

Mounting pressure and temperatures in power generation and industrial processing call for Cast Steel Valves. Jenkins offers a wide selection of patterns that have met the test of industry's toughest services.

In these valves — through special refinements in design to increase service life and assure long, trouble-free performance — Jenkins provides a wide margin of strength and safety beyond ratings. Their efficiency and low maintenance records measure up to the high standards established for *all* valves developed by Jenkins Valve *specialists*.

Ask your distributor for the new Jenkins Cast Steel Valve Catalog or write: Jenkins Bros., 100 Park Ave., New York 17.

LOOK FOR THIS DIAMOND MARK

JENKINS VALVES

SINCE 1864

If you write maker identify as IEN - 6903

AUTOMATIC PROTECTION OR CONTROL for your heating process

. . . WITH

ALNOR PYROTAC

Here's a simple, low-cost way to obtain *AUTOMATIC PROTECTION* against damage due to excessive temperatures . . . safeguard your investment in heating equipment and materials in process. This precision-built instrument constantly indicates temperature of the heated equipment and sounds an alarm and/or shuts down the heated circuit at a safe, pre-set temperature. It may also be used as a *CONTROLLER* on a process requiring shutdown upon reaching a final process temperature—such as ceramic kilns, molds, etc. Automatic thermocouple break protection assures safety if couple or extension wires should break.

Ask your Alnor representative for details on this sturdy, precise instrument. You'll find the price of less than a hundred dollars unusual for an instrument of this type. Write for bulletin that contains complete description and wiring diagrams of actual applications. Illinois Testing Laboratories, Inc., Room 517, 420 N. LaSalle Street, Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 6904

When you need precision steel DOWEL PINS

Get SAME-DAY SHIPMENT from

Order from Acme's huge stock of standard nominal and oversize Dowel Pins . . . shipment made within 24 hours. Whether you need a few, or many thousand, packaged or bulk, Acme can supply them FAST! Special sizes ground from semi-finished stock to fill any dowel pin requirement. Send for details now!

ACME INDUSTRIAL COMPANY

215 N. Laflin St., Chicago 7, Ill.

MFRS. OF STANDARDIZED DRILL JIG AND FIXTURE BUSHINGS

NEW LITERATURE—Continued

If you write maker identify as IEN - 0556

VARIABLE SPEED DRIVE . . Two variable-pitch sheaves give up to 8:1 ratio on fixed centers, using a standard V-belt. Seven standard sheaves sizes are 3 to 8 in. od. Rating is ¼ to 15 hp. Bulletin 44, 8 pages. Speed Selector Inc., 118-V Noble Court, Dept. IEN, Cleveland 13, Ohio

If you write maker identify as IEN - 0557

DRYING . . High-frequency heat in the Foundromatic machine dries foundry cores in minutes. Description of the dielectric machine and a set of 19 questions and answers are given in 12-page Bulletin 15-B-7306C. Allis-Chalmers Mfg. Co., 909 S. 70th St., Dept. IEN, Milwaukee 14, Wis.

If you write maker identify as IEN - 0558

ELECTRIC DUCT . . Enclosed electrified track with trolleys riding along it supplies power to moving equipment from portable tools to production test lines. Bulletin 40, 36 pages, gives details on Type 100. Feedrail Corp., 125 Barclay St., Dept. IEN, New York 7, N. Y.

If you write maker identify as IEN - 0559

ELECTRICAL PRODUCTS . . Modernizing your plant? Company urges you to look first at your electrical distribution setup as basic to successful modernization. "Compete or Collapse", sixteen-page Booklet B-6133, tells about it. Westinghouse Electric Corp., Box 2099, Dept. IEN, Pittsburgh 30, Pa.

If you write maker identify as IEN - 0560

ELECTRONIC PRODUCTS . . Quartz crystals in standard and temperature-controlled types, 5 to 100,000 kc. How to specify by type, temperature range, frequency tolerance, calibration tolerance is described in 6-page Bulletin ECQ-1. General Electric Co., Electronics Park, Dept. IEN, Syracuse 1, N. Y.

If you write maker identify as IEN - 0561

FASTENINGS . . Cold-forged cap screws made to specification in sizes from ¼ to $\frac{3}{16}$ in. with threads rolled after heat treating. Bulletin 1264-CH, 4 pages. Chandler Products Corp., 1430 Chardon Rd., Dept. IEN, Cleveland 17, Ohio

If you write maker identify as IEN - 0562

FASTENINGS . . Flat washers in 30,000 sizes up to 8 in. od. are made of metal or plastic as you specify. Company maintains stock dies for the purpose. Washer Catalog, 16 pages, describes standard and special types. H. K. Metalcraft Mfg. Co., 3775 Tenth Ave., Dept. IEN, New York 34, N. Y.

If you write maker identify as IEN - 0563

FASTENINGS . . Standard steel and malleable-iron washers, machinery-bushing washers, also special washers. Catalog 54, 12 pages, gives sizes, American Standards that apply, weights and tables of equivalents. Joliet Wrought Washer Co., Connell & Moen Ave., Dept. IEN, Joliet, Ill.

If you write maker identify as IEN - 0564

FASTENINGS . . Round-body weld nuts with self-locating neck have projections for resistance welding to thin sheet. They come in steel and stainless steel for thread size from 2-56 to ¼-20. Bulletin WN-154, 4 pages. Penn Engineering & Mfg. Co., Box 311, Dept. IEN, Doylestown, Pa.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6905

FOR MEDIUM AMOUNTS OF AIR *CONSTANTLY!*

JOY WG-9 COMPRESSOR

SPACE-SAVER VERTICAL DESIGN

WRITE FOR BULLETIN

Water-cooled, double-acting, single-stage. Replaceable crosshead guides and cylinder liners. Force-feed lubrication, bearings that *never* need adjusting. "Dual Cushion" valves for higher capacity and better heat dissipation. The WG-9 is a real performer—best in its class.

15 SIZES • 30 to 150 PSI
172 to 881 CFM

Consult a Joy Engineer

JOY

JOY MANUFACTURING CO., OLIVER BLDG., PITTSBURGH 22, PA.
IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED, GALT, ONTARIO.

If you write maker identify as IEN - 0565

LIQUID FILTERING . . Central filtration of coolant serves 24 machines doing a variety of small-parts work in a new large metal-working plant. "Special Report", 4 pages. Industrial Filtration Co., Dept. W-195, Lebanon, Ind.

If you write maker identify as IEN - 0566

FIRST AID . . Individual kits are assembled from stock items to fit your specific industry or needs. Each treatment or dressing is in its own package, ready to open and use. "First Aid Kits", 6 pages. E. D. Bullard Co., 275 Eighth St., Dept. IEN, San Francisco 3, Calif.

If you write maker identify as IEN - 0567

FLOOR PLATES . . Ancor rolled-steel plates armor the top surface of concrete floors against severe wear. Each plate has 25 anchors. "Ancor Floors", 16 pages. Flash-Stone Co., 3723 Pulaski Ave., Dept. IEN, Philadelphia 40, Pa.

If you write maker identify as IEN - 0568

FLOOR TREADS . . Non-slip treads for stairs and walkways in new or existing construction. Available types and instructions in 24-page "How to Make Stairs and Walkways Safe." Wooster Products Inc., Dept. IEN, Wooster, Ohio

If you write maker identify as IEN - 0569

TENSION GAGE . . Compact unit measures pull maximum at 500 to 100,000 lb. in a range of models. Twenty-three ideas on how to use it, from testing safety belts to weighing, are in 8-page Dynamometer Bulletin 25-E. W. C. Dillon & Co., 14620 Keswick St., Dept. IEN, Van Nuys, Calif.

If you write maker identify as IEN - 6906

For Safety's Sake . . .

DAV-SON FLASHING SAFETY DIRECTOR

Easier to Read—Easier to Change

Flashing Dav-Son Safety Director for plant safety. Traffic light red, green spots flash "SAFETY FIRST." Color, motion, light compel attention. Only Dav-Son has *changeable letter* design with removable panel for frequent quick-change message. Say what you want when you want. 98 3½" red and 250 1⅞" black acetate letters in compartment box inc. Size 18½x29x6. 110-120 volts, AC-DC. **$39.75**

Insist on genuine self-sealing cork back bulletin boards with hardwood frames. Many sizes to choose from. With or without glass doors. Also with metal frames for inside or outside use.

Solve employee communication problems with DAV-SON bulletin boards. World's largest selection. 100 different styles and sizes. Write today for complete information.

Dealer Inquiries Invited.

DAV-SON A. C. DAVENPORT & SON, INC., Dept. IE
311 N. DESPLAINES STREET • CHICAGO 6, ILLINOIS

INSIST ON DAV-SON—YOUR BEST BUY

If you write maker identify as IEN - 6907

QUALITY — EQUAL TO ANY CONSTRUCTION

BROOKVILLE BUILDINGS cost 30% less

• ALL STEEL
• FULLY INSULATED

Here at last is a pre-engineered building fully equivalent to the finest brick and masonry construction—*yet selling for 30 percent less.* These fully insulated, all-steel structures are erected with pre-fab speed, but are individually tailored to your requirements.

Single and multiple structures are available in an amazing choice of spans, lengths, heights, door and window arrangements, and ready as you desire for architectural frontal and interior treatment.

Write for Folder A for full details.

BROOKVILLE MANUFACTURING COMPANY
P.O. BOX 67 BROOKVILLE, PA.

If you write maker identify as **IEN - 0570**

TEFLON GASKETS . . Chemiseal line for corrosive service includes teflon-jacketed, molded-teflon, solid-teflon gaskets and teflon expansion joints. Bulletin TG-953, 8 pages. U. S. Gasket Co., Box 468, Dept. IEN, Camden 1, N. J.

If you write maker identify as **IEN - 0571**

GRINDING BELTS . . Coated abrasives in belt, disc, roll and sleeve forms are shown in 8-page "Weld Grinding" booklet with recommendation tables. Minnesota Mining & Mfg. Co., 900 Fauquier St., Dept. IEN, St. Paul 6, Minn.

If you write maker identify as **IEN - 0572**

FORM GRINDING . . Gears, splines and contoured parts are ground on automatic machines that have capacity to 36 in. od. and to 80 in. between centers. Examples in 8-page bulletin, "Formed Wheel Grinding". Gear Grinding Machine Co., 3901 Christopher St., Dept. IEN, Detroit 11, Mich.

If you write maker identify as **IEN - 0573**

TOOL GRINDING . . Three new data sheets describe a wet carbide tool grinder, a belt finish grinder for carbide tools, and a 1-in. flexible abrasive belt grinder. Bulletins 230, 240, 320, 2 pages each. Hammond Machinery Builders, 1600 Douglas Ave., Dept. IEN, Kalamazoo, Mich.

If you write maker identify as **IEN - 0574**

HANDLING . . Skid boxes, box stands, box trucks, pallets, storage racks, dump hoppers and trucks, hand trucks, grabs and slings. Catalog, 44 pages. Palmer-Shile Co., 16009 Fullerton Ave., Dept. IEN, Detroit 27, Mich.

If you write maker identify as **IEN - 6908**

Newark Wire Cloth is made of *all* malleable metals such as aluminum, brass, bronze, phosphor bronze, copper, monel, Nichrome, nickel and stainless steel; as well as the noble metals such as gold, silver, platinum, etc.

This wide range of metals enables you to select the one wire cloth to meet your conditions of corrosion and/or contamination.

In all metals, Newark Wire Cloth is accurately woven in a wide range of meshes, ranging from very coarse (4 inch space cloth), to extremely fine (up to 400 mesh). Our reputation for 'Accuracy' through more than 75 years is your guarantee of wire cloth quality.

We maintain a large stock of popular sizes in the more commonly used metals and can make prompt shipment. Let us quote on your requirements.

Send for our New Catalog E.

Newark Wire Cloth COMPANY

351 VERONA AVENUE • NEWARK 4, NEW JERSEY

NEW LITERATURE —*Continued*

If you write maker identify as **IEN - 0575**

HEATING ELEMENTS . . Flexible woven electric element conforms to a surface, molds into plastic or rubber if desired, supplies gentle heat up to 30 watts per sq. in. and 50 to 230 volts. Bulletin F-1548, 4 pages. Pre-Fab Heater Co., Dept. IEN, Guilford, Conn.

If you write maker identify as **IEN - 0576**

PROCESS HEATING . . Waste heat in flue gases is employed to preheat incoming combustion air, using the Ljungstrom air preheater. It is a gas-to-gas regenerative unit. Industrial and other uses in 36-page Bulletin. Air Preheater Corp., 60 E. 42nd St., Dept. IEN, New York 17, N. Y.

If you write maker identify as **IEN - 0577**

SPACE HEATING . . Vacuum steam heating equipment includes controls, vacuum pump, radiator valves, traps. Selectotherm Bulletin 540 tells how it works. Illinois Engineering Co., 2035 S. Racine Ave., Dept. IEN, Chicago 8, Ill.

If you write maker identify as **IEN - 0578**

CUTTING TOOL HOLDER . . Carbide inserts clamp into the company's Toolholder, can be used down to the last 1/8th inch with no chipbreaker grinding required. Inserts can be square, triangular, round. Catalog VR-435, 12 pages. Vascoloy-Ramet Corp., 800 S. Market St., Dept. IEN, Waukegan, Ill.

If you write maker identify as **IEN - 0579**

HOSE . . Teflon-plastic tube is reinforced with an outer braid of stainless steel to which fittings are swaged. The assembly withstands temperature to 450 deg. F., is rated at 1,000 lb. working pressure, handles solvents, fuels. Bulletin FH-1, "Fluoroflex-T Hose", 4 pages. Resistoflex Corp., 39 Plansoen St., Dept. IEN, Belleville 9, N. J.

If you write maker identify as **IEN - 0580**

JACKS . . How to select the right jack for the job is initial section in 40-page Catalog 204. Details follow on ratchet, screw, hydraulic, air-motor, air-hydraulic types along with information on safety and maintenance. Duff-Norton Mfg. Co., Box 1889, Dept. IEN, Pittsburgh 30, Pa.

If you write maker identify as **IEN - 0581**

PLANT LAYOUT . . Three-dimensional scale layouts are made by the company to assist you in planning a new plant or revising an existing one. Questions and answers are detailed by 24-page 1954 Catalog, letterhead request. Visual Plant Layouts, Penna Ave. & River Rd., Dept. IEN, Oakmont, Pa.

If you write maker identify as **IEN - 0582**

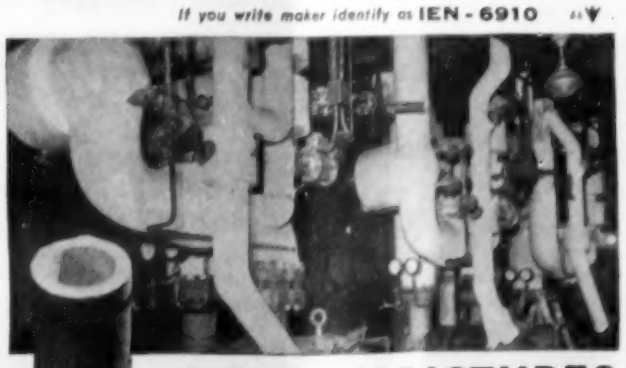
EQUIPMENT LUBRICATING . . Recommended oil, grease and other materials are listed by industry and machine in new 36-page Lubriplate Data Book 54-1. Special service materials and standard product data are given. Fiske Brothers Refining Co., 129 Lockwood St., Dept. IEN, Newark 5, N. J.

If you write maker identify as **IEN - 0583**

VALVE LUBRICATING . . Portable hand-operated guns and bucket pumps for pressure servicing of lubricated valves. A grease fitting replaces the lubricant screw permanently. Catalog 22-170, 8 pages. Alemite Div., Stewart-Warner Corp., 1826 Diversey Parkway, Dept. IEN, Chicago 14, Ill.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6910**



HEAT + MOISTURE?

use Calsilite insulation

Ruberoid's molded calcium silicate insulation withstands a soaking heat indefinitely up to 1250°F. It is not soluble in water, normal acids or alkalis. Moisture won't affect its efficiency or appearance. Calsilite, in pipe covering sections and flat blocks, offers single layer efficiency and application economy. Get all the facts. Write The Ruberoid Co., 500 Fifth Ave., New York 36, New York.

Send for Calsilite Data Folder

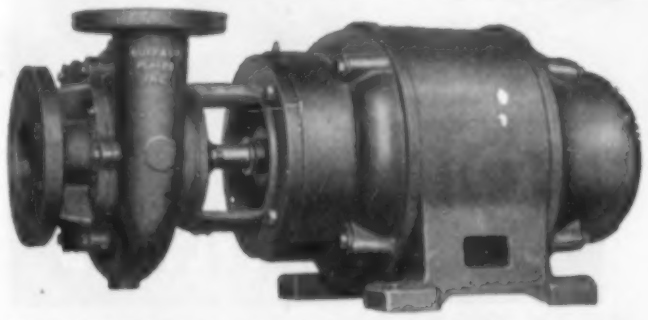
The RUBEROID Co.

Asphalt & Asbestos Building Materials

If you write maker identify as **IEN - 6911**

Efficient . . . Space-Saving

. . . RUGGED AS THEY COME!



"BUFFALO" Close-Coupled Pumps For Clear Water or Chemicals

Everything about these pumps is just about punishment-proof . . . the heavy cast brackets, and shell, husky shaft that's always in perfect alignment, the extra-deep stuffing box. And the sturdy, accurately machined "Buffalo" enclosed bronze impeller assures lastingly high efficiency. Standard construction is bronze-fitted, though special alloy trims are available. Capacities up to 1100 gpm (at 80' head). Write for Bulletin 975-D for the full data.

BUFFALO PUMPS, INC.

496 BROADWAY • BUFFALO, N. Y.

Subsidiary of BUFFALO FORGE COMPANY

CANADA PUMPS, LTD., Kitchener, Ont.

Sales Representatives in all Principal Cities

If you write maker identify as **IEN - 6912**

How cost-wise buyers rate

STANDARD STOCK **BALL BEARINGS**

GOOD BETTER ✓ BOSTON Gear

BALL BEARINGS

Radial • Thrust • Combination

Single Row • Double Row

—for Speeds up to 5000 RPM

IN STOCK AT 92 BOSTON Gear DISTRIBUTORS at Factory Prices

Look under "Gears" in the Yellow Classified Section of your Telephone Directory for the Distributor nearest you.

Get this Catalog . . . lists 5112 standardized machine parts . . . your reliable "textbook" of drive design and maintenance. Ask your BOSTON Gear Distributor, or write . . . Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

If you write maker identify as **IEN - 6913**

LOGAN AIR AND HYDRAULIC POWER

SPEEDS • COORDINATES • REFINES PRODUCTION IN OVER 10,000 INDUSTRIAL PLANTS

AIR-DRAULIC CYLINDERS • AIR and HYDRAULIC PRESSES • COLLET GRIP TUBE FITTINGS • SURE-FLOW COOLANT PUMPS • HYDRAULIC POWER UNITS • HYDRAULIC CYLINDERS • HYDRAULIC CONTROL VALVES • AIR CHUCKS • AIR CONTROL VALVES • AIR CYLINDERS

Logan

AIR CONTROL VALVES

• BALANCED PISTON

• COMPACT DESIGN

• EASILY INSTALLED

• SELF-CLEANING

79 MODELS

MOSTLY STOCK DELIVERY

LOGAN MANUFACTURES 6,975 STANDARD CATALOGED ITEMS • CATALOG ON REQUEST

Consult Logan for your Special Heavy-Duty, Mill-Type Cylinder requirements.

LOGANSPORT MACHINE CO., INC.

812 Center Avenue Logansport, Indiana

If you write maker identify as IEN - 6914

"Most of our dust is very fine but the DAY "AC" Dust Filter solved our problem".
Lapp Insulator Co., LeRoy, N. Y.

5 reasons for using DAY DUST FILTERS
("AC"—Hersey Type)

Five reasons why industries use and *reorder* DAY Dust Filters.

1. Constant air volumes.
2. High air-to-cloth ratio requires minimum floor space.
3. Self-adjusting blow rings assure perfect tube cleaning.
4. Continuous, automatic operation. No shut-down for cleaning.
5. Furnished housed or unhoused.

If you have a dust problem, write toDAY for Bulletin 528-R.

The **DAY** *Company*
813-3rd Ave. N. E., Minneapolis 13, Minn.
In Canada: P.O. Box 707, Ft. William, Ont.
Branch Plants in Buffalo, Ft. Worth and Toronto, Ont.
Representatives in Principal Cities

If you write maker identify as IEN - 6915

● with 8 TEST RANGES
● DIRECT DIAL READINGS

Designed to determine both the initial and basic stiffness of sheet and wire specimens, this improved ultra-sensitive model has *eight* test ranges instead of six. Now, the flexural rigidity of very thin materials such as cellophane and metal foil can also be determined with the SR150-14 attachment which magnifies dial readings 100 times. Test length, angle of deflection and rate of loading are all standardized for accurate test results between laboratories. Readings taken direct from dial. No calculations necessary! Send coupon for folder giving details and prices!

ABRASION RESISTANCE TESTER

Simulates ACTUAL abrasion and wear conditions during test and gives ACCURATE numerical index for your report. Recognized the world over as the STANDARD for testing plastics, rubber, textiles, paint and linoleum. Send coupon below for free booklet!

MAIL COUPON FOR FREE LITERATURE

Taber INSTRUMENT CORPORATION SECTION 15
111 Gaundry St., North Tonawanda, N. Y.
☐ Please send me booklet on Taber Stiffness Tester
☐ Please send me booklet on Taber Abraser
NAME .....
COMPANY .....
ADDRESS .....
CITY ..... ZONE ..... STATE .....

NEW LITERATURE—*Continued*

If you write maker identify as IEN - 0584

MACHINE PARTS . . Handles, knobs, fixture keys, die stops, clamps, fixture locks, jig feet, handwheels, layout equipment, chucks, vises. Pocket catalog 154, 52 pages, letterhead request please. Reid Tood Supply Co., 332 W. Delano Ave., Dept. IEN, Muskegon Heights, Mich.

If you write maker identify as IEN - 0585

MACHINING . . Company offers facilities to make machines and machine parts to your specifications. List of its metal-working equipment in 4-page "Precision Workmanship". Wicaco Machine Corp., 4801 Stenton Ave., Dept. IEN, Philadelphia 44, Pa.

If you write maker identify as IEN - 0586

PERFORATED METAL . . Typical patterns of perforated sheet and plate for ornamental use, machine guards, screening. "Perforated Sheets", 4 pages, tells how to order. Joseph T. Ryerson & Son, Box 8000-A, Dept. IEN, Chicago 80, Ill.

If you write maker identify as IEN - 0587

FLOW METERS . . Venturi tube for small flows has inlet size of ½ to 2 in. with four ratios of throat to main in the six sizes. It mounts direct in a pipe line. Typewritten 5-sheet data bulletin, "Type TF Venturi", shows how it assembles from components with .0005-in. tolerance. Simplex Valve & Meter Co., 68th & Upland Sts., Dept. IEN, Philadelphia 42, Pa.

If you write maker identify as IEN - 0588

pH METERS . . Reasons for pH control of industrial process operations, water treatment, waste treatment, are stated in 12-page Bulletin 340-5. Beckman Instruments Inc., 800 Mission St., Dept. IEN, South Pasadena 1, Calif.

If you write maker identify as IEN - 0589

MIXING . . Machine to tumble, rock or roll containers in order to mix the contents as supplied. They range from types for quart glass jars to those for 110-gal. drums. They are shown in new 8-page picture folder. Vol-U-Meter Co., P. O. Box 54, Dept. IEN, Buffalo 16, N. Y.

If you write maker identify as IEN - 0590

PIPE FITTINGS . . Unions in alloy, carbon, stainless steel for 3,000 and 6,000-lb. pressure service, also check valves for 500 to 1,500-lb. service. Catalog 11, 24 pages, gives list prices and sizes. Catawissa Valve & Fittings Co., 800 Mill St., Dept. IEN, Catawissa, Pa.

If you write maker identify as IEN - 0591

PIPE FITTINGS . . Ring-Tite is new coupling for Transite asbestos-cement pressure water pipe. It seals by means of rubber rings. Pipe size is 4 to 16 inches. Illustrated steps in 6-page Bulletin TR-142A. Johns-Manville, 22 E. 40th St., Dept. IEN, New York 16, N. Y.

If you write maker identify as IEN - 0592

PLASTIC PIPE . . Thermosetting resins and glass fibers are made into pipe by centrifugal casting. The pipe can be used between minus 65 and plus 130 deg. F. It comes in sizes from 2⅞ to 4½ inches. "Fibercast", 8 pages. Fibercast Corp., Box 326, Dept. IEN, Sand Springs, Okla.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6917

and Now **TWO NEW**
1 and 1½ hp
Variac *Motor Speed Controls*

With all of the advantages of the popular fractional horsepower models, these new, larger units have conventional pushbutton start-stop-reverse boxes and a separate VARIAC speed control for convenient mounting in any location.

FEATURES: No electronic tubes—no warm-up required; Extra-wide speed range—0 to rated or higher; High starting torque; Compact cabinet mounting; Easy maintenance; Simple installation.

Write for the VARIAC® Motor Speed Control Bulletin for information on all nine models with ratings from 1/15th hp or less, and up.

Type 1704-A (1 hp): $470
Type 1705-A (1½ hp illustrated): $495

GENERAL RADIO Company 275 Massachusetts Ave. Cambridge 39, Mass.
90 West St. NEW YORK 6 . 920 South Michigan Ave. CHICAGO 5
1000 North Seward St. LOS ANGELES 38

If you write maker identify as IEN - 0593

PLASTIC PRODUCTS . . Polyester resin with glass-fiber reinforcing is made in number of fabricated parts for corrosion-resistant service including 4 to 24-in. pipe, ventilation duct. Corrosion data in 4-page Bulletin 54. du Verre Incorporated, Box 97, Dept. IEN, Hamburg, N. Y.

If you write maker identify as IEN - 0594

PLASTIC SHEET . . Rigid Vinyl sheet for products from airplane windshields to electrotype molds. Bulletin SA, 8 pages, properties charts and fabrication instructions. Bakelite Co., 30 E. 42nd St., Dept. IEN, New York 17, N. Y .

If you write maker identify as IEN - 0595

PLATING . . Barrel-type to automatic plating machines, tanks, rectifiers, controls, dryers, filters, thickness testers and other accessory equipment and supplies are covered in 28-page General Catalog, just released. Udylite Corp., 1651 E. Grand Blvd., Dept. IEN, Detroit 11, Mich.

If you write maker identify as IEN - 0596

PRESS REPAIR . . "New Life" is the title of 12-page Bulletin R-49, just reissued, which shows how damaged or worn-out presses can be repaired or rebuilt with welded steel components replacing cast iron. Verson Allsteel Press Co., 9325 S. Kenwood Ave., Dept. IEN, Chicago 19, Ill.

If you write maker identify as IEN - 0597

IMPACT PRESS . . Solenoid-operated machine for punching, staking, riveting, swaging, peening. Stroke can be single or repeat. Bulletin 38, 8 pages. Black & Webster Inc., 445 Watertown St., Dept. IEN, Newton 58, Mass.

If you write maker identify as IEN - 6918

One More Thing You Have Been Asking For—

"Centre-Seal'd"
POWER RECTIFIERS

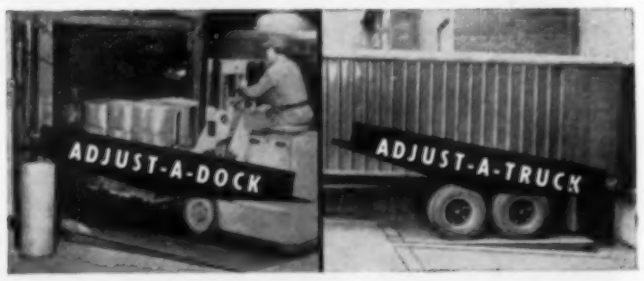
The "outside" collector serves as a seal against paint and moisture penetration to the inside or center collector. This provides clean contact between the inside collector and plate surface — a near-zero resistance even after years of operation.

Write or call for complete information.

Sarkes Tarzian Inc.
RECTIFIER DIVISION
415 N. College Ave., Dept. B-2, Bloomington, Ind.
In Canada—50 St. Clair Ave., N. W., Toronto

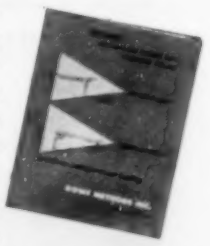
If you write maker identify as IEN - 6919

ROWE Adjustable Dock And Truck Ramps



. . . help you move more tonnage
. . . cut your dock handling costs
. . . eliminate non-productive dock tie-up of equipment and personnel
. . . reduce breakage and accidents

Whether you are planning new construction or modernizing old shipping facilities, ROWE offers a large selection of low cost dock or truck ramps that will enable you to improve the efficiency of your loading or unloading operations.



Write for a free copy of the ROWE booklet detailing equipment available.

ROWE METHODS, INC.
2534-H Detroit Avenue • Cleveland 13, Ohio

If you write maker identify as **IEN - 0598**

MECHANICAL PRESS . . Hamilton No. 401 is a strip-feed press for single and multi-die operation for can ends, screw caps and other light stampings. It rates 25 ton. Bulletin 1352, 4 pages. Baldwin-Lima-Hamilton Corp., Paschall Post Office, Dept. IEN, Philadelphia 42, Pa.

If you write maker identify as **IEN - 0599**

PROCESS VESSEL DOORS . . Quick-opening design is the feature of the company's door for pressure vessels such as vulcanizer, driers, curing chambers. Rating is to 300 lb. and 400 deg. F. Bulletin 2435, 8 pages. Blaw-Knox Co., 2050 Farmers Bank Bldg., Dept. IEN, Pittsburgh 22, Pa.

If you write maker identify as **IEN - 0600**

PROCESSING . . Kiln-room furniture and other supplies for the manufacture of ceramic products. Sixteen-page Catalog 54-C, letterhead request please, covers chinaware setters, firing racks, spurs, stilts, placing pins, thimbles. Louthan Mfg. Co., Dept. IEN, East Liverpool, Ohio

If you write maker identify as **IEN - 0601**

CENTRIFUGAL PUMP . . Drive shaft is replaced by a rotating magnetic field in the company's Dynapump. Electrical and liquid-handling portions are separate. The pump mounts like a fitting in a 1-in. pipe line, rates 15 gpm. at 14ft. head. The motor is ⅛ hp. Folder P-354, 4 pages. Fostoria Pressed Steel Corp., Dept. IEN, Fostoria, Ohio

If you write maker identify as **IEN - 0602**

TURBINE PUMP . . Sumpmaster is vertical turbine pump package unit in capacities from 10 to 2,600 gpm. and heads to 300 ft. Bulletin 54-3-1420, 20 pages. Byron Jackson Co., 1902 E. 65th St., Dept. IEN, Los Angeles 1, Calif.

If you write maker identify as **IEN - 6920**

Reduce Lost Man Hours

"Kerodex" Gives New and Improved Barrier Protection Against Contact Dermatitis

"Kerodex" is a new and improved barrier cream which offers maximum protection against hundreds of primary irritants and sensitizing agents encountered in industry. It provides an effective protective coating which is invisible yet strong and as elastic as the skin itself. It protects against initial contact. It prevents the recurrence of a dermatitis after recovery.

Special Advantages

"Kerodex" offers practical and effective protection *before* the damage is done. It is nonirritating and nonsensitizing. It may be applied with equal safety to the face, hands or any other area of the skin, keeping pores and follicles free from foreign matter.

"Kerodex" does not smear. It does not affect materials handled, nor is it affected by them. It is easy to apply, economical and highly acceptable to the user.

"Kerodex" provides a vital safety measure for the maintenance of high production levels.

Maximum Protection

"Kerodex"® is supplied in two types, and a series of creams are available to protect against: *water-soluble* irritants such as acids, alkalis, soaps, detergents, and *water-insoluble* irritants such as paints, enamels, cleaning fluids.

Write for Information

We'll be happy to send you complete descriptive literature, or to have our representative call at your convenience.

Ayerst Laboratories, 22 East 40th Street, New York 16, N. Y.

NEW LITERATURE —*Continued*

If you write maker identify as **IEN - 0603**

PYROMETERS . . Ten scale ranges from 400 to 3,000 deg. F. and three instrument designs are offered by 6-page Bulletin 4371 on the Alnor line. Illinois Testing Laboratories Inc., 420 N. LaSalle St., Dept. IEN, Chicago 10, Ill.

If you write maker identify as **IEN - 0604**

RECORD KEEPING . . Large hinged panels mount on wall or floor stand to open like a looseleaf book. They hold charts, material lists, prints, schedules ready for inspection. Sizes range to 7 by 8 feet. Multiplex Display Fixture Co., 910 N. 10th St., Dept. IEN, St. Louis 1, Mo.

If you write maker identify as **IEN - 0605**

REFRIGERATING . . 156-page "Dependabook No. 161" lists some 9,000 products including copper tubing, tube fittings, controls and valves, electric motors, hand tools. Harry Alter Co., 1728 S. Michigan Ave., Dept. IEN, Chicago 16, Ill.

If you write maker identify as **IEN - 0606**

PISTON RINGS . . Stock sizes from 1 to 27 in. in diameter in a range of metals, also hydraulic rings, die-casting plunger rings, guide rings for single-acting hydraulic cylinders. Catalog, 14 pages. Auto-Diesel Piston Ring Co., 3145 Superior Ave., Dept. IEN, Cleveland 14, Ohio

If you write maker identify as **IEN - 0607**

ROLLING . . Mill equipment for steel, brass, aluminum, magnesium. Sixty-page Bulletin 40-A covers hot and cold mills, drives, slitters, scrap choppers and other auxiliary equipment, includes a 16-page set of data tables such as bar weights. E. W. Bliss Co., Dept. IEN, Salem, Ohio

If you write maker identify as **IEN - 0608**

RUBBER TUBE . . Latex, gum, neoprene, Buna-S rubber tube in stock sizes to 5¼ in. o.d., also Tygon flexible plastic tube to 1½ in. o.d. List prices and standard lengths in 18-page Catalog M-100, recently revised. Miller Products Co., 29 Warren St., Dept. IEN, New York 7, N. Y.

If you write maker identify as **IEN - 0609**

SCREW MACHINE PARTS . . Made to your order in six brass alloys, nine bronze and two aluminum alloys. Data on these alloys, additional facilities available, examples of parts produced in 8-page Bulletin H-58572. Mueller Brass Co., 1925 Lapeer Ave., Dept. IEN, Port Huron, Mich.

If you write maker identify as **IEN - 0610**

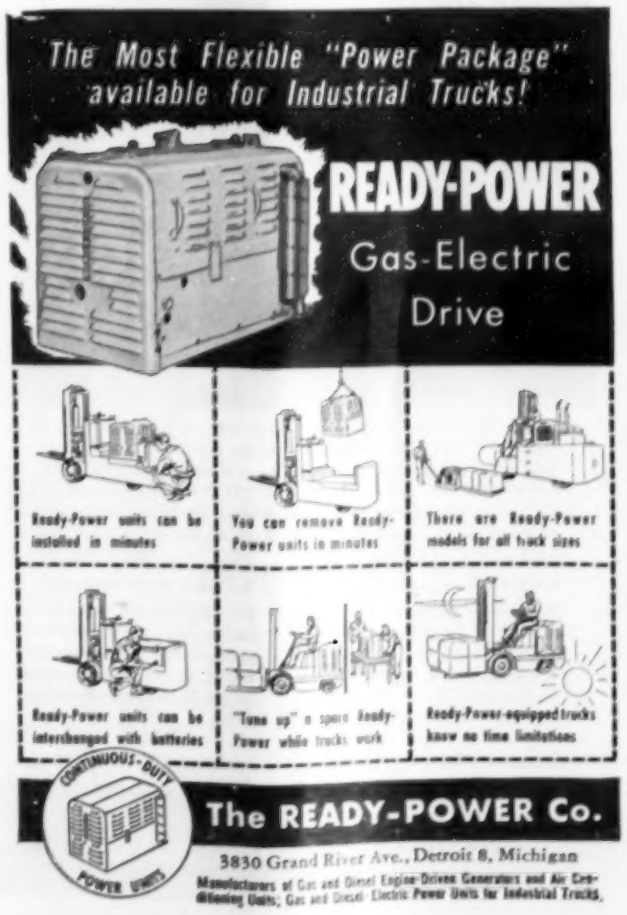
O-RING SEALS . . Rubber O-rings and how to select them, suggestions on gland design with recommended dimensions, diagrams on influence of pressure on O-rings, standard ring sizes. Catalog 9-B, 16 pages. Minnesota Rubber & Gasket Co., 3630 Wooddale Ave., Dept. IEN, Minneapolis 16, Minn.

If you write maker identify as **IEN - 0611**

SEWING . . Industrial sewing machines assemble from standard components to perform specific operations. Bulletin 1259-MT, 6 pages, shows examples. Singer Sewing Machine Co., 149 Broadway, Dept. IEN, New York 6, N. Y.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6922**



If you write maker identify as **IEN - 6923**

AIM for preset tension on your steel strapping

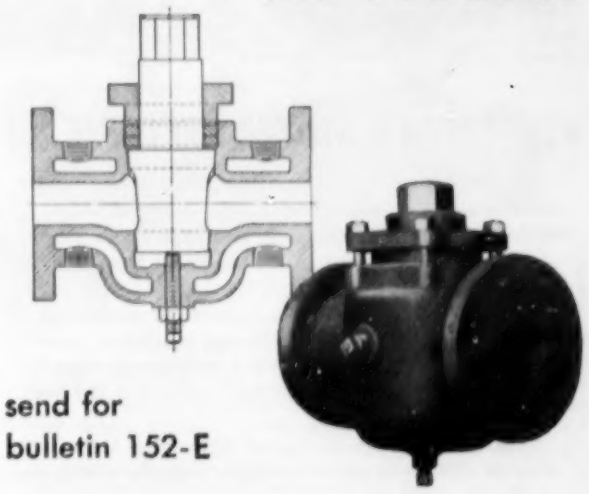
Acme Steel offers the only complete line of PNEUMATIC STRETCHERS

These new time-saving Acme Steel Strapping Tools can be set in advance for uniform, consistent tension. There's no guesswork. The Pneumatic Stretchers do the work—reducing employee fatigue. There are Acme Steel Pneumatic Stretchers for tensioning strapping on all sizes and shapes of containers, packages and bundles . . . and a model to suit your needs. For details, write Acme Steel Products Division, Dept. KL-64, Acme Steel Company, 2840 Archer Avenue, Chicago 4, Illinois.

AIM *for Safe, Lower-Cost Shipping* ACME STEEL

If you write maker identify as **IEN - 6924**

Now— JACKETED FITTINGS in *Ni-Resist*



send for bulletin 152-E

Parks-Cramer Company
FITCHBURG, MASSACHUSETTS

If you write maker identify as **IEN - 6925**

Built-in, threaded ⅛" tapping for air vent saves time, saves bushings and makes a neater job.

NIBCO quality control with individual pressure tests for each fitting eliminates test leaks. Precision solder cups make sound joints and save solder.

Specify NIBCO Baseboard Tees at your jobber's. Write for samples you can test on your own installations.

NIBCO NORTHERN INDIANA BRASS CO.
661 PLUM STREET, ELKHART, INDIANA

If you write maker identify as IEN - 6926

LAWLOR MOPWRINGERS

FOR EASIER MOPPING GET A LAWLOR NO. 2

EASIEST turning wringer made: there are bearings at ends of rollers.

EASY to bring rolls together: foot lever is perfectly balanced.

Copied but never duplicated!

EASY to move wringer; self-adjusting front casters raise metal feet from floor when you're ready to go.

The LAWLOR No. 2 accommodates any standard round, galvanized pail up to 16-quart capacity. Net weight of wringer—23 pounds.

LAWLOR No. 6 TWIN is like the No. 2 Wringer in general construction, but accommodates two pails.

Write for Catalog of Mopping Tools, Wringers, Floor Scrub Wax-Polishing Machines for every kind and size floor.

S. C. LAWLOR CO.
120 North Aberdeen Street • Chicago 7, Illinois

If you write maker identify as IEN - 6927

WHEN SPACE IS LIMITED AND LOW COST IS DESIRED

... SPECIFY UNITED ELECTRIC

Type J7 is a compact, precision-built pressure-vacuum control used for controlling air, gas or liquid pressures. It is especially suitable for applications where limited space, weight, and low cost are important factors. Write for Bulletin #5-7.

Type J40 is an inexpensive, lightweight pressure control that is widely used on industrial equipment, aircraft and other engine applications. It is reliable and rugged—ideal for applications that do not require a closed head. Write for Bulletin #5-9.

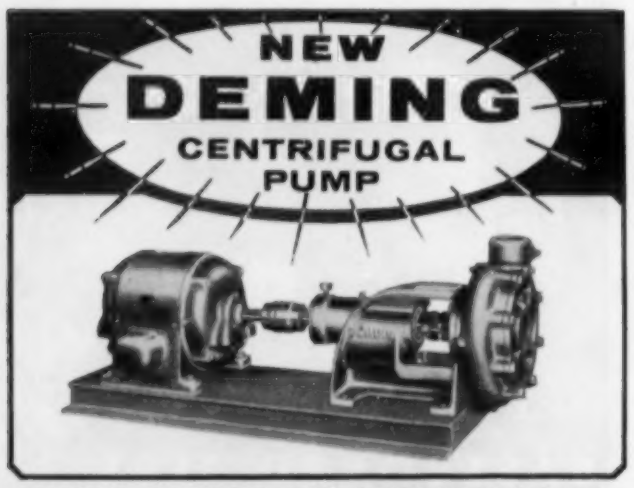
Switch Ratings (both Types): 15 amps at 115 or 230 volts AC. DC or 20 amp AC switches available on request.

UNITED ELECTRIC CONTROLS COMPANY
80 School Street, Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

If you write maker identify as IEN - 6928

NEW DEMING CENTRIFUGAL PUMP



WIDE RANGE OF APPLICATIONS

Capacities of Fig. 4011 End Suction Centrifugal Pumps range to 1,000 g.p.m. against heads to 240 feet. Available with electric motor, or equipped with pulley for belt drive, or pump only as specified.

Optional features: Separate liquid end can be cast iron (standard) or made of special metal for handling corrosive liquids. Power end remains standard cast iron construction. Standard, or special stuffing box heads, or mechanical seal construction are optional features. Standard 3-vane, semi-open impeller or special impeller with wiping vanes are optional. Many other important features.

For complete details, write for Bulletin No. 4011

THE DEMING COMPANY
521 BROADWAY • SALEM, OHIO

NEW LITERATURE—Continued

If you write maker identify as IEN - 0612

FLEXIBLE SHAFTS . . Standard assemblies and fittings for light-duty drive service and remote position control. Catalog 5494, 16 pages, gives data on 24 shafts, 29 casings, 30 coupling assemblies, 100 components. Kupfrian Mfg. Co., 380 State St., Dept. IEN, Binghamton, N. Y.

If you write maker identify as IEN - 0613

SIGNALING . . Fire detector is a cylinder of compressed Freon gas about the size of a flashlight. Temperature of 136 deg. F. sets off an ear-splitting 95-decibel whistle that lasts for about 15 minutes. "Fyr-Larm", 4 pages, describes it. Fyr-Larm Co., 243 Broad St., Dept. IEN, Summit, N. J.

If you write maker identify as IEN - 0614

SIGNALING . . Trafficones, conical rubber stands, serve as barricades, hold warning signs, direct vehicular and pedestrian traffic. Catalog, 36 sheets. Interstate Rubber Products Corp., 908 Avila St., Dept. IEN, Los Angeles 12, Calif.

If you write maker identify as IEN - 0615

SPEED REDUCERS . . Catalog 1006 has 48 pages of information on how to select a speed reducer to meet your application, how to order one, standard sizes and ratings, gearmotors, lubrication instructions and a trouble check list. Eberhardt-Denver Co., 1418 W. Colfax Ave., Dept. IEN, Denver 4, Colo.

If you write maker identify as IEN - 0616

SPROCKETS . . Gripmaster-design stock sprockets have clamp bushings that grip the shaft and removable or replaceable sprocket portions. Catalog 184, 16 pages, gives list prices on these and on chain, flexible couplings. Cullman Wheel Co., 1344 Altgeld St., Dept. IEN, Chicago 14, Ill.

If you write maker identify as IEN - 0617

STAMPINGS . . Four examples of short-run stampings in 8-page Bulletin F-185 show drawings and quote costs on first 100 pieces, first 1,000 pieces, subsequent 100 and 1,000-piece orders. Scope of the service is summarized with picture examples. Dayton Rogers Mfg. Co., 2824 13th Ave., Dept. IEN, Minneapolis 7, Minn.

If you write maker identify as IEN - 0618

STAPLING . . Gun tackers that work by handle compression, hammer-type stapling tools, cushion-knob strike tackers, pneumatic tools including a clinch-type unit. Application suggestions in 24-page "Duo-Fast" catalog. Fastener Corp., 860 Fletcher St., Dept. IEN, Chicago 14, Ill.

If you write maker identify as IEN - 0619

STAPLING . . Staple Queen is a production-line machine to close center-slotted cartons top and bottom simultaneously. Diagrams in 8-page Bulletin Q-501 show how the curved anvils advance, clinch and retract. International Staple & Machine Co., 801 Herrin St., Dept. IEN, Herrin, Ill.

If you write maker identify as IEN - 0620

STORING . . Steel tool boxes and chests with hinged covers, some with removable trays, also utility boxes, machinist's chests, small-parts cabinet. Eleven types in 4-page bulletin, "Metal Boxes and Chests". Waterloo Valve Spring Compressor Co., Dept. IEN, Waterloo, Iowa

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6929

TIMKEN CONNECTS WITH CADWELD

THE TIMKEN ROLLER BEARING COMPANY of Canton, Ohio, used CADWELD electrical connections on the installation of their new power panel. 1000 MCM cables were CADWELDED to ⅜ x 2" offset lugs. The panel controls a 2000 H.P. constant potential DC motor driving the Assel Elongator Mill. The upper cables lead to the main DC supply bus while those at the bottom go direct to the 2000 H.P. Motor.

CADWELD connections were used for four main reasons:

1. They cannot loosen or corrode.
2. They have a greater current carrying capacity than the cable itself.
3. They are small in outside diameter and meet the space limitation requirements.
4. The equipment necessary to make the CADWELD connections is portable, therefore connections could be made at final assembly point.

for the best in ELECTRICAL CONNECTIONS

The Current Trend is CADWELD
ERICO PRODUCTS, INC.

If you write maker identify as IEN - 0621

SWITCHES . . Toggle lever-operated switches with snap action and 1 to 24 separate circuits. Catalog 73-A, 12 pages, covers 19 assemblies and some 90 AN and JAN designs. Micro Switch, Div. Minneapolis-Honeywell Regulator Co., 30 E. Spring St., Dept. IEN, Freeport, Ill.

If you write maker identify as IEN - 0622

METAL TESTING . . Equipment to sort parts by metallurgical characteristics, locate defects, also electronic micrometers, insulation testers. Bulletin 32, 8 pages. J. W. Dice Co., 1 Engle St., Dept. IEN, Englewood, N. J.

If you write maker identify as IEN - 0623

THERMOMETERS . . Glass and metal designs for industrial and laboratory work, also ASTM and other test thermometers, glass hydrometers. "Hydrometers and Thermometers", 36 pages, includes a temperature conversion table. Emil Greiner Co., 22-24 N. Moore St., Dept. IEN, New York 13, N. Y.

If you write maker identify as IEN - 0624

THREADING MACHINE . . Sensitive small-hole tapping machine has capacity to 10-32 maximum. Table does the feeding. Details in 4-page Bulletin T-54. Hamilton Tool Co., 905 Hanover St., Dept. IEN, Hamilton, Ohio

If you write maker identify as IEN - 0625

TIMING . . Informal description on relation of timers and counters to automatic machine and process control, along with a summary on available reset, single-cycle and repeat-cycle timers. "Automation Booklet", 12 pages. Eagle Signal Corp., 202 20th St., Dept. IEN, Moline, Ill.

If you write maker identify as IEN - 6930

WHEN LIGHTS GO OUT EXIDE® LIGHTGUARDS® GO ON INSTANTLY...AUTOMATICALLY!

Wherever people gather, there's a vital need for Exide Lightguard protection. Some industrial plants use as many as 200! Here are spots where you now need Lightguard emergency lighting protection: *Corridors, aisles, cafeterias, lobbies, boiler rooms, engine rooms, switchboard rooms, loading platforms, exits, firetowers.*

NEW MODEL M

With the new Model M you get instant adequate lighting whenever normal lighting is interrupted—no matter what the reason. The Model M has a two-rate charger—high rate or trickle. After the emergency, automatic controls recharge the Exide battery specially designed for long life, easy maintenance, dependable operation. UL-approved, can be plugged into any 115 volt outlet—each lamp illuminates up to 10,000 square feet.

WRITE for interesting folder with facts on why Exide Lightguards guarantee more protection for every dollar you invest in such equipment.

Exide INDUSTRIAL DIVISION
The Electric Storage Battery Co., Philadelphia 2, Pa.

If you write maker identify as IEN - 6931

FASTENING PROBLEMS Solved!

This floating anchor nut solved a costly problem. Formerly, 3 separate parts made installation difficult and costly; removal was impossible. Our design, easily installed and easily removed cut costs sharply.

Ten years experience in the design and development of *specialized* fasteners, enables us to help you. Consultation on your problem, especially in the *design* stage, will result in a cheaper, more efficient fastener for your product. *Write today.* NS-101

RESEARCH DIVISION
811 AIRWAY
GLENDALE 1, CALIF.
Citrus 4-4191
CHapman 5-3693

Nutt-Shel

Manufacturers of
SELF-LOCKING ANCHOR NUT
BOLT AND NUT RETAINERS

If you write maker identify as **IEN - 0626**

TRANSFORMERS . . Stock units by a number of makers, also Signal Corps models, in filament, bell, plate, output, audio, 400-cycle types, also chokes. Catalog C-13, 12 pages. Wells Sales Inc., 833 W. Chicago Ave., Dept. IEN, Chicago 22, Ill.

If you write maker identify as **IEN - 0627**

STEAM TRAPS . . How to select and apply a steam trap is described in 1954 revised edition of "Solving Steam Trap Problems", 36 pages. Included are combination float and thermostatic traps, air traps, strainers. V. D. Anderson Co., 1935 W. 96th St., Dept. IEN, Cleveland 2, Ohio

If you write maker identify as **IEN - 0628**

LIFT TRUCKS . . Electric transmission is the feature of company's Dynamotive gasoline fork lift truck, 4,000-lb. capacity. "Model GLF-40", 4 pages. Automatic Transportation Co., 149 W. 87th St., Dept. IEN, Chicago 20, Ill.

If you write maker identify as **IEN - 0629**

LIFT TRUCKS . . Unusual or difficult handling jobs solved by special power lift trucks or attachments, such as a power wrench to open dump hoppers, are described in Bulletin B-515, 8 pages. Elwell-Parker Electric Co., 4205 St. Clair Ave., Dept. IEN, Cleveland 3, Ohio

If you write maker identify as **IEN - 0630**

STEEL TUBE . . Carbon, alloy and stainless tube is made by resistance or Heli-arc welding of formed strip. Production size range is ¼ to 3 in. od. Bulletin SM, 8 pages, shows manufacture of standard and cold-drawn types. Wallingford Steel Co., 49 Valley Road, Dept. IEN, Wallingford, Conn.

If you write maker identify as **IEN - 6932**

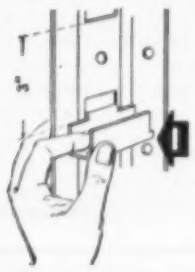
NEW

SIMPLICITY and FEATURES

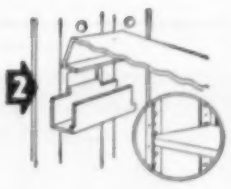
BORROUGHS *UNITIZED flexi STEEL SHELVING

***every unit is a unit within itself!**

Here's a revolutionary idea in steel shelving. It's by far the most flexible shelving on the market. Shelves can be adjusted independently in a unit without disturbing shelves in adjacent units —no tricky tools or gadgets needed—see illustrations 1-2-3.

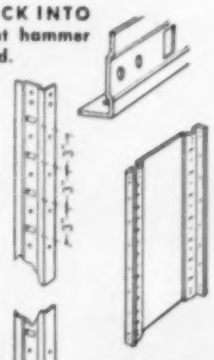


INSERT SHELF SUPPORT BRACKET—no studs or bolts—no nuts or lock washers to fumble with.



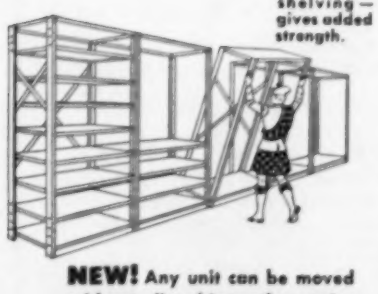
TILT SHELF INTO SUPPORT BRACKET and you're finished.

PRESS SHELF LOCK INTO POSITION—a slight hammer tap and it's locked.



NEW! Borroughs shaped post —for open shelving — gives added strength.

NEW! 1-piece closed uprights—for closed shelving — no bolts— saves erection time.



NEW! Any unit can be moved without disturbing other units.

send for Catalogue

BORROUGHS MANUFACTURING COMPANY

A SUBSIDIARY OF AMERICAN METAL PRODUCTS COMPANY OF DETROIT

3002 NORTH BURDICK amp KALAMAZOO, MICHIGAN

NEW LITERATURE —Concluded

If you write maker identify as **IEN - 0631**

TITANIUM TUBE . . Seamless from .035 to 1.500 in. od. and Weldrawn from .125 to 1.250 in. od. are standard ranges in which the company can supply titanium tube. Eight-page Bulletin 42 describes uses, fabricating. Superior Tube Co., 1538 Germantown Ave., Dept. IEN, Norristown, Pa.

If you write maker identify as **IEN - 0632**

BLOWOFF VALVES . . What you should know about blowoff valves is one section in new 29-page 12-D1 Catalog which covers angle and straight valves for 300 to 2,500-lb. service. Edward Valves Inc., Rockwell Mfg. Co., 1211 W. 145th St., Dept. IEN, East Chicago, Ind.

If you write maker identify as **IEN - 0633**

INSTRUMENT VALVE . . Combines unions, nipples, reducers, elbows, tees, valve and drain valve into one unit, rates to 1,500 and 4,000 lb. water or gas at 100 deg. F. Bulletin 234, 4 pages, gives details. Jerguson Gage & Valve Co., 80 Fellsway, Dept. IEN, Somerville 45, Mass.

If you write maker identify as **IEN - 0634**

OPERATING VALVES . . Catalog 801, 56 pages, describes oil hydraulic threaded valves for 2,000-lb. service including 2-way, 4-way, check, reducing, relief units. Hydraulic Press Mfg. Co., Dept. IEN, Mount Gilead, Ohio

If you write maker identify as **IEN - 0635**

REGULATING VALVES . . Single and two-stage pressure-regulating valves for compressed gases from argon to hydrogen. Catalog 806, 36 pages, groups them by application such as welding, cutting, flame hardening, pipe lines. Air Reduction Sales Co., 60 E. 42nd St., Dept. IEN, New York 17, N. Y.

If you write maker identify as **IEN - 0636**

VISES . . Catalog 110 has 36 pages on machinist's, jeweler's, woodworking, pipe, drill-press, and air-hydraulic vises, C-clamps, work positioners. Wilton Tool Mfg. Co., 941 Wrightwood Ave., Dept. IEN, Chicago 14, Ill.

If you write maker identify as **IEN - 0637**

WATER PROOFING . . Line of materials for masonry maintenance includes waterproofing, sealing, concrete hardening products. Bulletin 38, 8 pages. Standard Dry Wall Products Inc., Donnelly St., Dept. IEN, New Eagle, Pa.

If you write maker identify as **IEN - 0638**

WATER TREATING . . Demineralizing equipment removes ionizable impurities from water for industrial process use. Twenty-page Catalog 127 tells how it works, shows models from 5 to 2,500 gal. per hour. Barnstead Still & Sterilizer Co., 104 Lanesville Terrace, Dept. IEN, Boston 31, Mass.

If you write maker identify as **IEN - 0639**

WIRE ROPE SLINGS . . Catalog A-900, 56 pages, deals with round-rope, Flatweave, grommet slings. It gives safe load ratings at various angles, includes a section on wire rope fittings. John A. Roebling's Sons Corp., 612 S. Broad St., Dept. IEN, Trenton 2, N. J.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6934**

NOW! AN IMPROVED LOW COST CASTER

with Hardened Raceways Unbreakable Fork and Top Plate

SERVICE PRESSWELD CASTERS

STRONG! AGILE! QUIET!

Here, at last, is a truly efficient, light-weight caster in the low-cost field. Ideal for Dollies, Racks, Box Trucks and similar applications in the moderate capacity range. Many features usually found only in high price casters provide for years of trouble-free performance. Get PressWelds — and get SERVICE quality at low cost.

Write for sizes, capacities and low prices

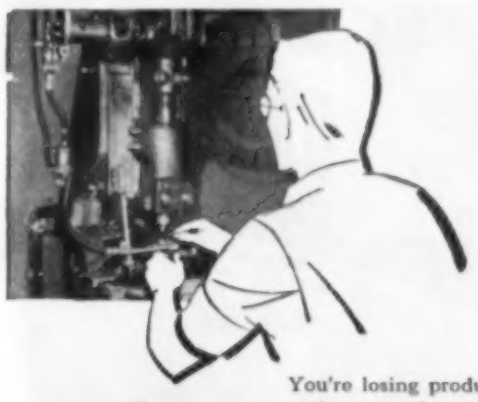
INDOOR-OUTDOOR Made BETTER and SAFER

SERVICE CASTER & TRUCK CORP.

Executive Offices: Albion, Michigan
Plants at Albion, Michigan & Somerville 43, Mass.

See your Classified Telephone Directory for Nearest Distributor

If you write maker identify as **IEN - 6935**



Step Up Production and Safety, Too with Schrader Air Ejection

You're losing production when operators must manually unload work from your presses. Extra work takes time, and adds hazards to the job.

A Schrader Air Ejection Set will give your presses—and operators —a new lease on life. Fully automatic, these sets deliver enough air to eject the part, but no more. They are actuated by cams or trippers, and are delivered to you ready to install.

Various sets are available to handle any ejection problem.

Get full details on Schrader Ejection Sets. Write today for the Schrader catalog.

A. SCHRADER'S SON

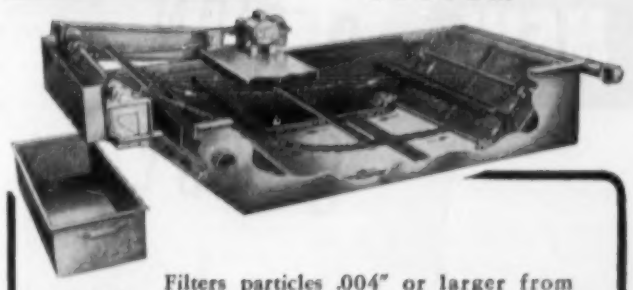
Division of Scovill Manufacturing Company, Incorporated

458 Vanderbilt Avenue, Dept. D-39, Brooklyn 38, N. Y.

If you write maker identify as **IEN - 6936**

New! Filters Small Solids...

Delpark Settling and Filter SYSTEM



Filters particles .004" or larger from liquids of varying viscosity containing solids of different particle sizes and weights.

Power-driven expeller flights, solid and of special bristle brushes, sweep solids from the screen and settling area up a ramp at the opposite end. A special cleaning device removes the solids from the flights before their return to the filter. Screens easily removed for manual cleaning. A blank metal sheet replaces the screen during cleaning.

WRITE FOR NEW BULLETIN

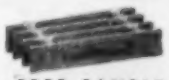
INDUSTRIAL FILTRATION COMPANY

95 INDUSTRIAL AVE. LEBANON, INDIANA

If you write maker identify as **IEN - 6937**

Gary GRATING

with the HEXAGONAL CROSS BARS Resistance Welded



FREE SAMPLE Write for paper weight size sample and catalog IN-64

Standard Steel Spring Division

ROCKWELL SPRING AND AXLE CO.

4045 East Seventh Avenue • Gary, Indiana

If you write maker identify as IEN - 6938

Won't Smudge!

LABELON PLASTIC TAPE

RESISTS: DIRT GREASE WATER ACIDS

Write on it

STICKS WITHOUT MOISTENING

LABELON TAPE sticks without moistening to any smooth, dry surface—yet strips off cleanly. Write or print on it with pencil, stylus or typewriter. Message WON'T SMUDGE . . . defies dirt, grease, water, acids . . . stays clean, easy-to-read—because writing surface is protected by transparent plastic! Available in rolls—or in flat form on backing sheets for typewriter use.

Use Labelon "Write on it" Tape to label stockroom shelves, bins, tools, hard-to-mark parts; for indicating rejects and service department repairs; for marking laboratory equipment, supplies, experiments; for panel boards or wiring; for office files, folders, etc.

For samples and prices, see your nearest dealer or write Dept. IEN-6.

LABELON TAPE CO., INC.
450 Atlantic Ave., Rochester 9, N. Y.

If you write maker identify as IEN - 6939

FREE!

NEW DESIGN GUIDE

TO VIBRATION AND NOISE CONTROL

This completely new and practical guide to vibration shock and noise control provides helpful performance tables on standard units and typical case histories of special jobs that have been solved by General's custom designed and produced mountings.

It also features bushings for correction of misalignment and bearings designed to take torque action and oscillation.

For immediate help on your vibration problem, give us the facts on your company letterhead, or request a call from our field specialist on the attached coupon.

THE GENERAL TIRE

"From Plans to Products in Plastics and Rubber"

Industrial Products Division
WABASH INDIANA

The General Tire & Rubber Company
Industrial Products Division
Wabash, Indiana

☐ Send your free design guide on General Silentbloc
☐ Have your representative contact us

Company_____ Name_____

Street_____ City_____ State_____

IEN-6-54

If you write maker identify as IEN - 6941

GAGE . . Dial indicator, shock proof cam and screw mechanism

Source: NILSSON GAGE CO.
255 Mansion St., Dept. IEN, Poughkeepsie, N. Y.

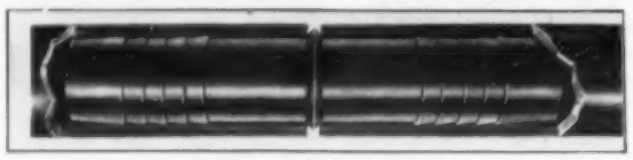
Nilcoid design

Pivoted cam rides in a single screw thread to convert rocking to rotating motion of the pointer in this new dial indicator. The mechanism takes the place of gears and is not subject to wear due to shock operation. The indicator can be supplied with over-travel to 0.03 inch. Nylon stop pins absorb over-travel shock. The dial is step down design to bring the scale and pointer to the same plane. The crystal over the housing face is flat. Three sizes measure 1¼ to 2¼ inches.

If you write maker identify as IEN - 6942

PIPE . . Extruded polyethylene, flexible, ½ to 1½ in. sizes

Source: HAMILTON RUBBER MFG. CORP.
Box 361, Dept. IEN, Trenton 3, N. J.

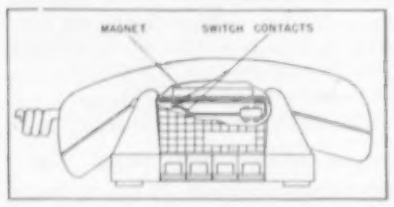


Samples and data upon request

Polyethylene plastic is compounded with non-toxic ingredients in manufacture of a new extruded plastic pipe that is not subject to attack by rotting or electrolytic corrosion. The pipe is particularly suited for underground utility water lines. It rates 450-lb. pressure in the ½-in. size, 200 lb. in the 1½-in. size. The company has added the new pipe to its previously developed lines of industrial rubber products.

If you write maker identify as IEN - 6943

Permanent magnet, supplied by Carboloy, 11167 E. 8-Mile Road, Dept. IEN, Detroit 32, Mich., is simplifying the construction of the familiar telephone handset. The magnet attracts a movable steel plate in the base of the telephone to hold the circuit open while the instrument is resting on its supports. Picking it up breaks the magnetic action and the plate drops to close the circuit. The button operated switch is eliminated.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6944

PILOT LIGHTS

Protect valuable equipment with JOHNSON pilot lights . . .

Used as indicators, inexpensive pilot lights can protect your equipment from further damage should circuit failures occur. Available in a wide variety of types, JOHNSON panel indicators include continuous indication neon types, and models for high and low voltage incandescent bulbs. Standard or wide angle glass and lucite jewels available in clear, red, green, amber, blue, or opal lenses. Variations from standards, including those meeting military specifications, are available in production quantities.

For further information write for pilot light catalog

E. F. JOHNSON COMPANY
309 2nd Ave. S. W. • Waseca, Minnesota

If you write maker identify as IEN - 6945

DESIGNERS

new free booklet tells all about

MASONITE PRESDWOOD

Better products, better production! New booklet tells how to gain both—through versatile Masonite Presdwood®. Gives properties—tells how to use the 44 types and thicknesses of this strong, dense, all-wood hardboard. Send for your copy today!

PRESDWOOD WOOD MADE BETTER

NATURALLY STRONGER WITH LIGNIN

MASONITE® CORPORATION
Dept. IEN-6, Box 777, Chicago 90, Ill.

"Masonite" signifies that Masonite Corporation is the source of the product

If you write maker identify as IEN - 6946

COMAR SMALL SPACE RELAYS ARE BEST

Modern aircraft, communications apparatus and other control equipment requires components that combine efficiency with compactness and light weight. Comar's famous small-space relays meet this need. Very compact in size, yet rugged enough to withstand vibration, shock and temperature extremes, they are unsurpassed in performance and dependability. When you need miniature, medium or heavy duty relays, it will pay you to contact Comar.

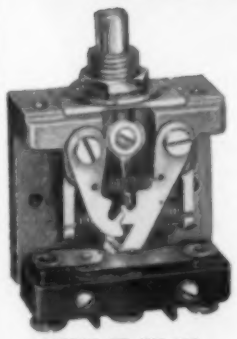
Comar ELECTRIC COMPANY
3349 Addison Street • Chicago 18, Illinois

RELAYS • SOLENOIDS • COILS • TRANSFORMERS • SWITCHES • HERMETIC SEALING

If you write maker identify as IEN - 6947

GENERAL CONTROL LIMIT SWITCHES

PRECISE *LIMIT* SWITCHING



PATENT NO. 102,089

A - C - O
LIMIT SWITCH

The A-C-O, a new development in off-on Limit Switches, is an innovation for use on machine tools and other Limit Switch applications. The first press transfers the contacts; the second press restores them. Contacts are maintained at the completion of each plunger stroke.

Uses long-life "*du-op*" mechanism.

COVER SUPPLIED.

Write for Bulletin IEN-500.

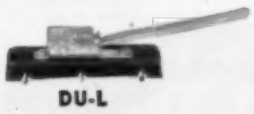
Cut-away view
DU-S
Standard Actuator

"du-op"
SLOW MAKE LIMIT SWITCHES

The "*du-op*" Limit Switch is standard dimensionally, but has many unique advantages. Direct-acting, mechanical lost motion is eliminated.

LONG LIFE

Under laboratory conditions it showed no appreciable signs of wear after 100,000,000 actuations. This results in reduced replacement costs and less time lost through maintenance.



DU-L
3-position
Leaf Actuator

Other actuators available.

Write for Bulletin IEN-400.

GENERAL CONTROL COMPANY
1200 Soldiers Field Road (Est. 1934) Boston 34, Mass.

If you write maker identify as IEN - 6948

Extra ECONOMY... RELIABILITY...

with **SPRAGUE** *internally fused*

POWER FACTOR CAPACITORS

- ✓ LOWER POWER COSTS!
- ✓ CIRCUIT PROTECTION!
- ✓ INCREASED SAFETY!
- ✓ CONTINUOUS SERVICE!

Power Factor Correction is a profitable investment for you—especially with Sprague Unit-Cell Capacitors. They save you money by reducing power costs with existing loads or by permitting greater load with existing wiring, transformers, and switchgear. Each unit in a Sprague Capacitor assembly is individually fused for added reliability.

Write today for free, cost-saving guide.

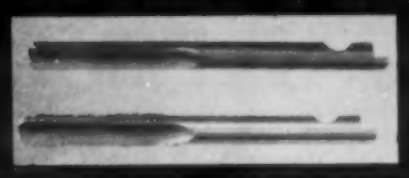
SPRAGUE SPRAGUE ELECTRIC COMPANY
165 Marshall Street,
North Adams, Mass.

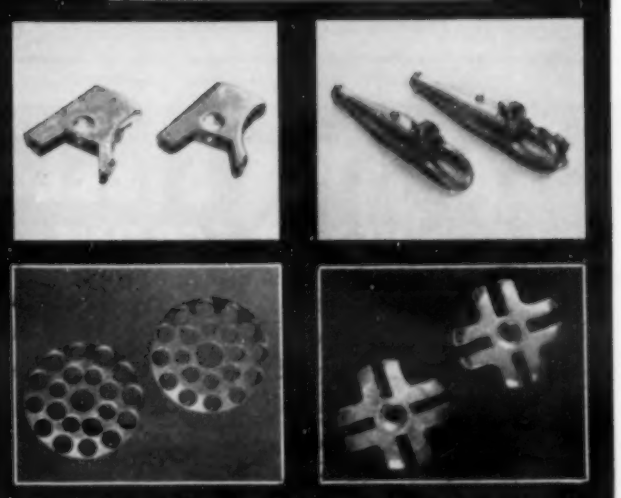
If you write maker identify as IEN - 6949

ALMCO
Supersheen
SPEED FINISHING
ALBERT LEA, MINN.

BARREL FINISHING ABRASIVE COMPOUNDS

THE RIGHT COMPOUNDS FOR YOUR SPECIFIC NEEDS—WITH THE RIGHT CHARACTERISTICS FOR BEST RESULTS





Supersheen Abrasive Compounds are formulated for use with *all types* of barrel finishing machines—they produce an infinitely *superior* grinding action—and can be used with *all types* of chips or metal media. They will increase the cutting action of any chip—and long-lasting qualities reduce your compound cost.

Send today for complete details of Almco Supersheen Compounds. Over 40 different standard types.

ALMCO *Supersheen*
AMERICA'S LARGEST MANUFACTURER OF ADVANCED BARREL FINISHING EQUIPMENT—MATERIALS AND COMPOUNDS
ALBERT LEA, MINNESOTA

If you write maker identify as IEN - 6951

DRILLING . . Upright machine for holes to 1¾ in. in cast iron

Source: ALZMETALL
30 Church St., Dept. IEN, New York 7, N. Y.

Tachometer shows speed

Model AB4 designates a new drilling machine that provides two spindle speed ranges selected by operating a lever in a change-gear transmission and by changing pitch on the V-belt sheaves that connect the motor and the geared head. Low range is 80 to 240 rpm. High range is 240 to 700 rpm. The spindle can be fed by hand or by connecting a power feed for three rates at 0.004, 0.007 and 0.012 in. per revolution.

The spindle carries a No. 4 Morse taper and rides in a quill to provide 6⅞ in. of axial movement. It is mounted on precision ball and roller bearings and is splined at its driving end. The circular table takes work to 27 in. in diameter to clear the 6⅞-in. column.

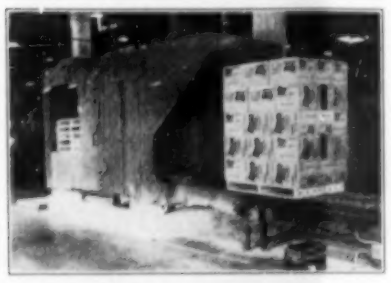
The head encloses the gearing in a bath of oil. The ground quill is aligned in a honed housing. Drive employs a 3-hp. motor for operation on 220/440 volt 60-cycle ac. Magnetic control and fuses are assembled in a box beneath the motor.

Optional equipment includes a motor driven coolant pump, magnetic reversing control for the spindle rotation, provision for automatic tapping and a pedal operated switch for emergency control of the tapping operation. The machine base encloses a coolant reservoir. A spotlight is located in the throat to direct illumination at the tools.

If you write maker identify as IEN - 6952

HANDLING . . Stacking machine loads cartons or cases on pallets

Source: LAMSON CORPORATION
303-5 Lamson St., Dept. IEN, Syracuse 1, N. Y.



Loaded pallet to right

Assemblies to store pallets on either the left or right hand side, or on the rear, are now available in the company's Pallet Loader, previously described IEN-12779-51. The three arrangements make it possible to place the loader in any position with relation to the loading of empty pallets that may be convenient.

Cartons or cases are conveyed to the top of the assembly where they are positioned and pushed onto a pallet on an elevator. As each layer is completed, the elevator moves down one increment so the next layer can be pushed into place until the pallet is at the bottom of the elevator travel and completely loaded. Empty pallets, stored in the magazine, are presented one at a time just prior to the elevator moving back to its top position to start a fresh loading cycle. Cartons can be stacked at the rate of 15,000 per 8-hr. shift. One machine can handle the output from 1 to 3 filling lines. Pallet sizes can range to 48 in. in width.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6953

SHOP SUPT. SAYS....
"Buck Cuts Time-Costs-Waste!"

CUTS TIME 30% • CUTS COSTS 50% • CUTS REJECTS 15% to 20%

Buck on Grinders-Lathes

AJUST-TRU
PAT. NO. 2,639,157
CHUCKS

Only universal scroll chuck with .0005" precision—for lathes, grinders, dividing heads, screw machines.

2-jaw and 6-jaw in 4", 5", 6", 7½", 9" sizes. 2-jaw Aviation chucks, for odd-shaped parts, in 6", 7½", 9" sizes.

ALSO SUPER-GRIP 4-JAW INDEPENDENT CHUCKS FOR 9" to 16" LATHES.

Globe Gear Co., Royal Oak, Mich., makes this report. They use Buck 6"-6 jaw and Buck 6"-2 jaw Ajust-Tru Chucks on the Parker-Majestic Internal Grinder, South Bend Lathe and Monarch Lathe for drilling, boring, reaming.

On work held to .0005" precision they report a 50% saving of time compared to previous methods . . . 50% cost saving per operation . . . and 15% to 20% reduction in rejects.

You too can save every time you use Buck Ajust-Tru Chucks. They adjust to dead true precision within one minute . . . guarantee .0005" precision on duplicate rechucking . . . eliminate special collets, reduce need for stub arbors, mandrels, special fixtures. No price premium for Buck chucks. Send for catalog today.

BUCK TOOL COMPANY
616 SCHIPPERS LANE • KALAMAZOO, MICH.

If you write maker identify as IEN - 6954

SHELDON
CHICAGO U. S. A.

More will be *profit* with a SHELDON

It actually costs less to do turning jobs on a Sheldon Precision Lathe. Machine-tool investment is cut to a fraction. Power cost is materially reduced. Less experienced operators can operate Sheldons safely and efficiently. Even cost-loadings for plant-floor space, heat and light are lower because two Sheldons can often operate in the space occupied by one large lathe.

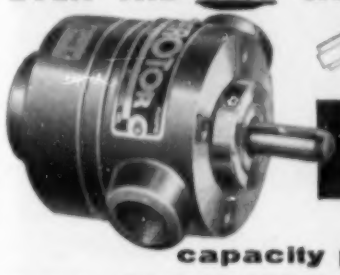
On most "everyday" jobs a Sheldon will actually turn out more pieces per hour too. With double V-belts to the spindle Sheldon lathes deliver enough power to take heavy cuts in direct drive, at high speeds. Sheldon's "Zero Precision" Taper Roller Bearings permit work to the closest tolerances. Seldom are such extremely accurate bearings used in moderate priced lathes.

You will actually keep more as profit if you use Sheldon Lathes. Write for Catalog.

SHELDON MACHINE CO., Inc. 4208 North Knox Ave., Chicago 41, Ill.

If you write maker identify as IEN - 6955

EVEN THE BEST CAN BE IMPROVED



Gerotor offers its *New QDB* series of small capacity pumps as proof!

Gerotor has redesigned its series of small capacity pumps to give even more . . .

- **FLEXIBILITY**—the QDB can be operated in either clockwise or counter-clockwise direction by simply changing the position of one internal plug!
- **RANGE OF APPLICATION**—the QDB can be obtained with an extended shaft to operate another pump in tandem, off of one motor!
- **DEPENDABLE SERVICE**—the QDB is built to give more dependable service over a longer service span than any comparable pump. Its longer life reduces your maintenance and replacement costs.

If you have need for pumps in the QDB range, call on Gerotor.

Gerotor makes a complete line of hydraulic pumps in ranges from .4 g.p.m. to 40 g.p.m. The Gerotor engineers can help you solve your hydraulic pump problems. Write for *free literature* and full particulars.

Check this Capacity Table

Type	Delivery g.p.m.—1800 r.p.m. Discharge Pressure p.s.i. 0	250	500	750	1000
QDB .4	.42	.40	.38	.35	.31
QDB .75	.84	.80	.78	.73	.66
QDB 1.5	1.67	1.62	1.57	1.50	1.42

GEROTOR MAY CORP. - Box 86 - Baltimore 3, Md.

GEROTOR
HYDRAULIC PUMPS & MOTORS

If you write maker identify as IEN - 6956

NOW 4 TYPES 295 SIZES
Starrett precision ground
FLAT STOCK AND DIE STOCK

NO. 497 AIR HARDENING
NO. 496 OIL HARDENING
NO. 495 OIL OR WATER HARDENING
NO. 498 WATER HARDENING

LOOK FOR THE MARK OF PRECISION
Starrett
ON EVERY PIECE

Each piece is marked for type and size and individually packaged in a protective envelope showing chemical analysis, hardening and tempering information.

WRITE FOR NEW FOLDER AND WALL CHART

Listing the 295 sizes available and giving hardening formulas for the four types. Address Dept. N.

Save time. Save money. Save valuable man and machine hours. Use Starrett precision ground Die and Flat stock for all precision parts, pieces, punches, dies and special tools having two flat, parallel sides. Just select the right type and size of flat stock from the complete Starrett line . . . lay it out . . . and saw it out. (For best cutting, use Starrett Band Saws.)

Keep a supply of frequently used sizes in the tool crib . . . or call your Industrial Distributor for prompt, dependable, quality service.

Starrett
"WORLD'S GREATEST TOOLMAKERS"

MECHANICS' HAND-MEASURING TOOLS AND PRECISION INSTRUMENTS · DIAL INDICATORS · STEEL TAPES · PRECISION GROUND FLAT STOCK · HACKSAWS, BAND SAWS and BAND KNIVES
THE L. S. STARRETT COMPANY, ATHOL, MASSACHUSETTS, U. S. A.

If you write maker identify as IEN - 6957

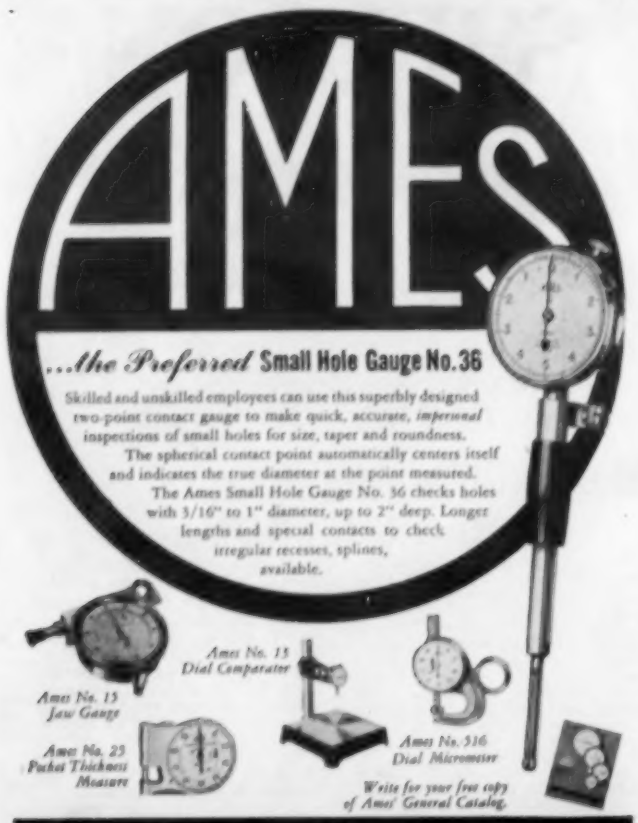
AMES

...the Preferred Small Hole Gauge No. 36

Skilled and unskilled employees can use this superbly designed two-point contact gauge to make quick, accurate, *impersonal* inspections of small holes for size, taper and roundness.

The spherical contact point automatically centers itself and indicates the true diameter at the point measured.

The Ames Small Hole Gauge No. 36 checks holes with 5/16" to 1" diameter, up to 2" deep. Longer lengths and special contacts to check irregular recesses, splines, available.



Write for your free copy of Ames' General Catalog.

Representatives in principal cities. B. C. AMES CO. *33 Ames Street Waltham 54, Mass.*

Mfgr. of Micrometer Dial Gauges • Micrometer Dial Indicators

If you write maker identify as IEN - 6958

Precision comes easy with...

INDIA® & HARD ARKANSAS® OILSTONE FILES

For that final touch on tools, dies and parts, these INDIA Oilstone Files can't be surpassed. They assure fast, easy and close tolerance cuts no matter how intricate the surface. Available in 35 shapes and 97 sizes . . . plus choice of three grits: Coarse, Medium, Fine. For final finishes ask your distributor for HARD ARKANSAS

HERE'S NEW OILSTONE DATA

Complete data on the entire BEHR-MANNING Oilstone line. Write to BEHR-MANNING, Troy, N. Y. for your copy. Address Dept. IEN-6.

O-5

BEHR-MANNING ▲ COATED ABRASIVES ▲ SHARPENING STONES ▲ PRESSURE SENSITIVE TAPES

If you write maker identify as IEN - 6959

GEAR PROBLEMS?

Check with-

FAIRFIELD!

If you use gears in the product you make, we believe it will pay you, as it has others, to become acquainted with FAIRFIELD—the place where fine gears are produced to meet your specifications EFFICIENTLY, ECONOMICALLY! Fairfield's production facilities are unexcelled for making all kinds of high precision, automotive type gears such as are now finding wide use in all branches of industry: for tractors, trucks, and buses . . . for agricultural implements . . . for construction machinery . . . for machine tools. Ask for latest literature describing Fairfield's facilities. Your inquiry will receive prompt attention.

FAIRFIELD
Manufacturing Co.
2333 S. Concord Road
LAFAYETTE, INDIANA

If you write maker identify as IEN - 6960

WELDING . . Universal arc machine positions welding head and rotates work

Source: MORTON MFG. COMPANY
Broadway at Hoyt, Dept. IEN, Muskegon Hts., Mich.

Available to order

Figure 3138 is a new assembly of standard heavy duty work positioner mounted on a base with a vertical column that carries a power operated saddle on which single or multiple universal welding head mounting arms are secured. The arms provide for manual horizontal and radial movement for the welding head.

The positioner adjusts to set the work at a desired angle and to rotate it while the welding operation proceeds. A hole is bored through the work table for application of hydraulic and pneumatic controls and for water or gas. Drilled and threaded holes on the table surface provide a means to anchor interchangeable fixtures.

Controls for the machine operation and the welding cycle are assembled in a swinging pendent station. All movements on the machine are protected against overtravel by interlocked electric limit switches.

If you write maker identify as IEN - 6961

RECTIFIER . . Selenium unit rates 5 amp. to 6 or 12 volt dc. output

Source: KOCOUR COMPANY
4800 S. St. Louis Ave., Dept. IEN, Chicago 32, Ill.

Steel housing

Model 5B is a new unit in the company's rectifier line for use in small scale plating, as a battery charger, as a control unit and for research and development work. It operates on 110-volt 60-cycle ac. input. It is equipped with a voltmeter and ammeter, each accurate within 2 per cent of full scale. Adjustments are by turning the knob on a Powerstat unit for continuously variable settings over the full rectifier range. The assembly measures 14 by 8½ by 8 inches. It weighs 22 lb. and lists at $85.

If you write maker identify as IEN - 6962

Salesmen calling at Dravo Corporation, 1203 Dravo Bldg., Dept. IEN, Pittsburgh 22, Pa., are assisted in making contact with the individuals in the company's purchasing department. The help is contained in a new booklet, "Facts and Faces in the Dravo Machinery Division Purchasing Department". Ask Mr. E. Hoierman at the company for a copy. It is first class.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6963

DARNELL CASTERS & E-Z ROLL WHEELS

ECONOMY and EFFICIENCY

STRING GUARDS...
Even though string and ravelings may wind around the hub, these string guards insure easy rolling at all times.

RUST-PROOFED...
by the Udylite process, Darnell Casters give longer, care-free life wherever water, steam and corroding chemicals are freely used.

RUBBER TREADS...
a wide choice of treads suited to all types of floors, including Darnelloprene oil, water and chemical-resistant treads, make Darnell Casters and Wheels highly adapted to rough usage.

LUBRICATION...
all swivel and wheel bearings are factory packed with a high quality grease. Zerk fittings are provided for easy lubrication.

Write for Free Darnell Manual

DARNELL CORPORATION, LTD.
DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
60 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

If you write maker identify as IEN - 6964

Only $1.53 A DAY can cut your materials handling costs by 50% or MORE!

SKYLIFT
Feature-packed fork lift, 2,000-pound capacity.

TRANSPORTER
Operator-led electric truck, capacities to 10,000 pounds.

New "EARN-ITS-OWN-WAY" LEASE PLAN* eliminates capital investment—puts an Automatic truck in your plant today!

Now you can *lease* an Automatic truck, complete with battery and charger, for as little as $1.53 a day ...which drops to an unbelievable *14¢ a day* after 5 year lease term expires.

"Earn-Its-Own-Way" Plan also includes a deferred-payment Purchase plan and a variety of flexible options.

Under "Earn-Its-Own-Way" Plan, Automatic trucks can *pay for themselves* —and give you a profit besides!

**Plan available in U. S. A. only*

Automatic
109 West 87th St., Dept. H-4
Chicago 20, Illinois
World's Largest Exclusive Builder Of Electric-Driven Industrial Trucks

If you write maker identify as IEN - 6965

For Accurate TEMPERATURE RECORDS at MODERATE COST

Use TEMPSCRIBE Recorders

The TEMPSCRIBE self-registering Recording Thermometer meets a long-felt need for a moderately priced recorder for general purpose applications where a graphic record of temperature in surrounding air is required. The record—written on an easy-to-read chart, 4" in diameter, with graduations spaced uniformly over full range—is indispensable wherever knowledge is desired if temperature goes above or below any given point. TEMPSCRIBE is the only recorder made with pen and actuating element in door, which, when opened, permits a clear view of the complete chart, and easy chart replacement without danger of damaging pen arm or accidentally marking chart.

Write for Bulletin 704

BACHARACH INDUSTRIAL INSTRUMENT CO.
7301 Penn Avenue • Pittsburgh 8, Pa.

If you write maker identify as IEN - 6966

STAINLESS STEEL CONVEYOR SCREWS

4", 6", 9", 12" DIA.

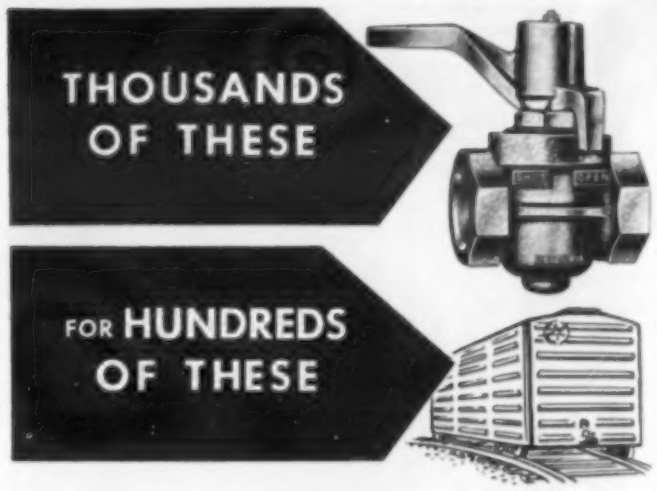
for immediate delivery

STOCKED IN TWO STYLES
- Continuous Welded and Polished
- Industrial Finish

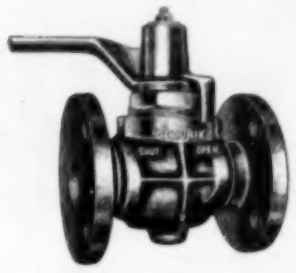
M-H STANDARD CO.
514 Communipaw Ave., Jersey City 4, N. J.

Other M-H Products: VERSABAR Metal Framing, ARMORBELT Metal Belt Conveyor, MONOFLO Rotating Cable Conveyor.

If you write maker identify as **IEN - 6967**



To handle coolant brine, DeZURIK VALVES with resilient-faced plugs have been specified for a great new "fleet" of railway refrigerator cars. Again in this case, they fit the situation perfectly, assuring drip-tight service, resisting corrosion, eliminating sticking, and gumming, withstanding hard usage, vibration and strain, requiring no adjustment or lubrication.

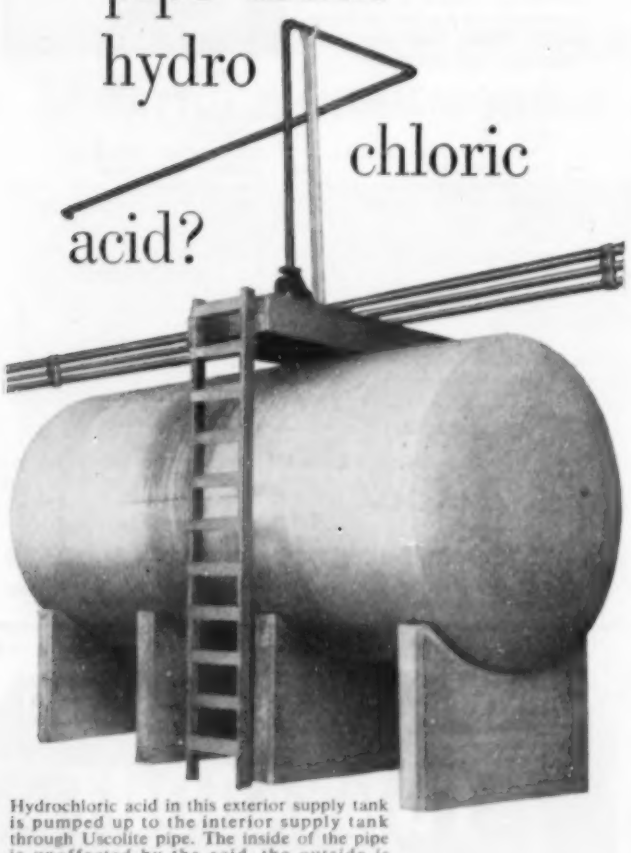


With brine in the line or almost anything else, DeZURIK PLUG VALVES are real insurance against failure in vital cases and places. Write for details.

DeZURIK SHOWER CO.
Representatives in Principal Cities
SARTELL, MINNESOTA

If you write maker identify as **IEN - 6968**

How long can "U. S." Uscolite pipe drink hydro chloric acid?



Hydrochloric acid in this exterior supply tank is pumped up to the interior supply tank through Uscolite pipe. The inside of the pipe is unaffected by the acid, the outside is unaffected by the weather.

A very long time. In a Western sugar factory, for example, Uscolite® pipe has been on the job 24 hours a day for over two years—and shows no signs of wear, inside or out.

Chemical resistance is only one of the many qualities of this amazing thermoplastic pipe. Uscolite is also recommended for handling materials sensitive to contamination—because it is non-toxic and imparts no odors. It is very tough—thrives under the most severe conditions. It is easily cut and threaded in standard equipment and can be drilled and tapped, sawed and machined.

Developed by United States Rubber Company, Uscolite is used in every type of industry...and always with savings in cost, improvement in performance. Call on any of our 27 District Sales Offices, or write to address below.

"U. S." Research perfects it
"U. S." Production builds it
U. S. Industry depends on it

UNITED STATES RUBBER COMPANY

Mechanical Goods Division • Rockefeller Center, New York 20, N. Y.
Hose • Belting • Expansion Joints • Rubber-to-metal Products • Oil Field Specialties • Plastic Pipe and Fittings • Molded & Extruded Rubber & Plastic Products • Protective Linings & Coatings • Grinding Wheels • Packings • Tapes • Conductive Rubber • Adhesives • Roll Coverings • Mats & Matting

---

If you write maker identify as **IEN - 6970**

TRUCK . . Engine driven fork lift carries 10 ton load over rough ground

Source: CLARK EQUIPMENT CO.
Dept. IEN, Battle Creek 49, Mich.

For yards and construction

Lift, tilt, steering and braking are all hydraulically powered in this new Clark-Ross Y-200 truck. It rates 10 ton at 24-in. load center. It is designed particularly for operation on rough ground and under difficult conditions. Underclearance is 10 in. at the uprights.

A Hercules gasoline engine, rated 112 hp. at 2,800 rpm., connects to the front wheels through a transmission and a planetary gear reduction, the latter at the drive wheels. The transmission provides four speeds forward and reverse. It is equipped with a single-plate 14-in. clutch. Steering is at the rear wheels. The tires are interchangeable.

If you write maker identify as **IEN - 6971**

PLASTIC . . Styrene type resin, shatter proof, heat resistant, soluble

Source: MARBON CORPORATION
1926 W. 10th St., Dept. IEN, Gary, Ind.

Report CY-1 upon request

Cycolac is a new high impact thermoplastic styrene-type resin resembling rubber in toughness. It is metal like in its surface hardness, resistant to attack by concentrated and dilute alkalis and by hydrochloric and dilute sulfuric acid. It is available in white and a range of bright colors. It is suited for milling, calendering, extruding, injection molding post forming. It can be solvent welded and machined on conventional metal working equipment.

If you write maker identify as **IEN - 6972**

STAPLING . . Hand operated tool with pointed blade for carton tops

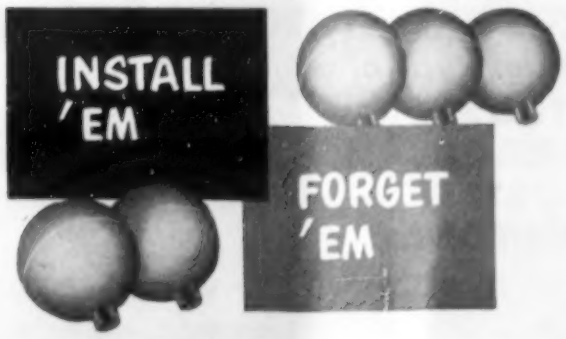
Source: BOSTITCH
1016 Mechanic St., Dept. IEN, Westerly, R. I.

For a packaging line

The blade of this new Type P4-8P stapling tool can be inserted at the edge of a container to clinch a staple, when the tool is operated, so the staple is forced through the top flap of a carton. When the tool is withdrawn only a small slit remains at the point of entry. A 4⅜-in. blade permits stapling the carton top at a considerable distance from the edge. The tool employs ¼, ⅜ or ½-inch staples to meet requirements of the operation.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6973**



STAINLESS STEEL FLOATS

• Stainless floats by Chicago Float Works give you a practically permanent installation. Whether for use on original equipment or for replacement, you just put 'em in and forget 'em. You'll get years and years of trouble-free service in high or low temperatures or pressures. All sizes, shapes, spud connections available. No corrosion problem . . . extreme buoyancy—the best in floats to meet every need!

• **Standard Diameters 2" to 10"** • All Standard **Spud Connections** • **Top quality** Stainless Steels • **Non-corized weld for superior** strength, and **corrosion resistance available** where required

Send for complete bulletin on styles, sizes, shapes, **spud connections and recommendations**

CHICAGO FLOAT WORKS
2326 South Western Avenue • Chicago 8, Illinois

If you write maker identify as **IEN - 6974**

For fast, accurate inspection and measurement

Fast, accurate, and requiring little skill to operate, the Kodak Contour Projector may well be the answer to your inspection, assembly, or measurement problems.

Few objects are too small or complicated for rapid, complete inspection under magnification with a Kodak Contour Projector. And you can handle large parts, too, for there's an unvarying 8 inches between lens and object at all magnifications from 10× to 100×. Surface illumination for checking blind holes, cavities, or other surface features is available by the mere flick of a switch.

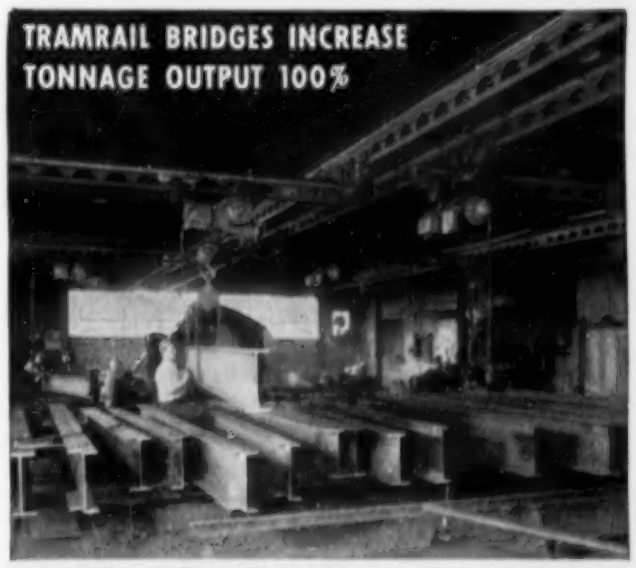
To learn how the Kodak Contour Projector can be used in your plant, send for Booklet F1-68.

Special Products Sales Division
EASTMAN KODAK COMPANY
Rochester 4, N. Y.

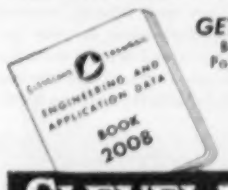
the KODAK CONTOUR PROJECTOR

Kodak

If you write maker identify as **IEN - 6975**



A steel fabricator replaced an I-beam crane system with modern Cleveland Tramrail equipment and thereby doubled his tonnage output. This is a typical story, because regardless of size or type, most Cleveland Tramrail installations pay for themselves within a few months.



GET THIS BOOK!
BOOK No. 2008
Packed with valuable information

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4239 East 285th St., Wickliffe, O.

CLEVELAND TRAMRAIL

If you write maker identify as **IEN - 6976**

NEW! Greater Capacity! Smaller Size! Longer Life!

A revolutionary development in industrial gearing! Foote Bros. applies its aircraft quality gear manufacturing experience to its industrial gear production...to give you greater capacity and longer life in less space!

Want to learn how these better gears will work in your product? Write today for complete details!

FOOTE BROS. GEAR AND MACHINE CORPORATION
4545 S. Western Boulevard, Dept. AD, Chicago 9, Illinois

FOOTE BROS.
Better Power Transmission Through Better Gears

If you write maker identify as IEN - 6977

Steel SHOP and TOTE Boxes

*In quantity lots. Write for prices for quantity you need. Prices F.O.B. Michigan City, Indiana.

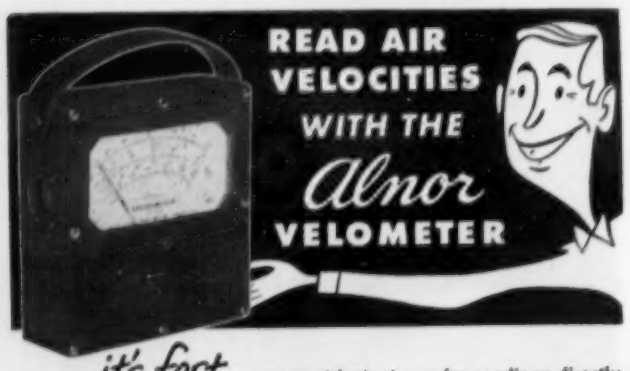
17½" long x 8" wide x 13" deep

(Inside Dimensions)

Why pay for 4 to 6 boxes and only get one? Thousands of manufacturers have used these boxes for years at great annual savings. You too can cut costs! Just tell us how many you need. We'll give you the lowest prices, fill your needs completely at savings up to 75%.

BARNES and SMITH CORPORATION
6521-A W. State Street • Milwaukee 13, Wis.

If you write maker identify as IEN - 6978



it's fast . . . you get instant, precise readings directly from scale face . . . no need for reference charts or calculations. Measure air flow through ducts, grilles, motors, spray booths, etc., or in the open.

it's accurate . . . brings laboratory standards of air velocity measurement to the production line, mine, mill . . . anywhere. Needs no special care or handling . . . anyone can use it and get accurate results.

it's portable . . . completely self-contained, hand-held. Rugged construction and sturdy case protect the Velometer from usual hazards of portable use. Available in scale ranges to 24,000 f.p.m. Wide selection of jets and fittings assures adaptability of Alnor Velometer to your application. Get full details and prices, write for Bulletin 2448-G. Illinois Testing Laboratories, Inc., Rm. 517, 420 N. La Salle St., Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

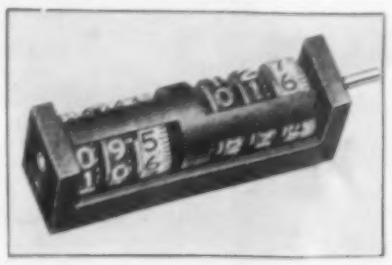
If you write maker identify as IEN - 6979

NEW CONSTRUCTION

If you write maker identify as IEN - 6980

COUNTING . . Wheel type indicator for both plus and minus reading

Source: DURANT MFG. COMPANY
1930 N. Buffum St., Dept. IEN, Milwaukee 1, Wis.



Built to order

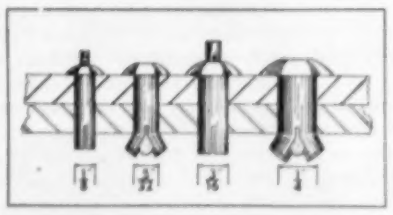
Dual Bank is a new special counter initially developed for use in a navigating instrument. It indicates knots to the right or left of the course. It is fitted with a shutter to close off either counting bank when it is on the minus side of its reading. Unit wheels, in each counter row, are marked off in 50 increments for accuracy.

The wheels and pinions ride on oil impregnated bushings for speed to 1,400 rpm. and for torque that does not exceed 0.8 inch ounce. Materials are magnesium and aluminum except the gears, pinions and lockwashers. These are hardened steel. The shaft is made of stainless steel. Overall dimensions are 3¼ by ¾ by 1.14 inches.

If you write maker identify as IEN - 6981

FASTENING . . Aluminum rivet requires access to only one work face

Source: SOUTH CHESTER CORPORATION
Dept. IEN, Lester, Pa.

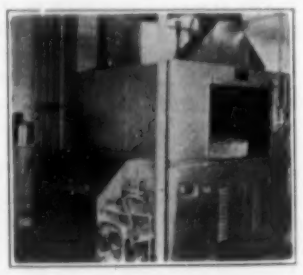


Makes tight assembly

New size, with $\frac{1}{32}$ in. shank, has been added to the company's line of "blind" aluminum rivets, previously described IEN-11819-53. The rivet is inserted into a hole and the pin protruding from the head end is struck with a hammer. The pin moves down through the shank to expand four prongs at the outer blind end. These prongs form a second head and pull the work parts permanently together. Four sizes in the line now range from ⅛ to ¼ in. in shank diameter. Grip length is from $\frac{1}{32}$ to ⅝ inch.

If you write maker identify as IEN - 6982

The problem of keeping animal cages and feeding bottles clean and sterile in the laboratory of a pharmaceutical manufacturer has been solved by installation of a special washing machine designed by Industrial Washing Machine Corp., 32 Main St., Dept. IEN, Matawan, N. J. Overall dimensions are about 7 by 8 by 7 feet. High pressure spray equipment does the job of washing and rinsing to eliminate a previous hand job of cleaning.



All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6983

For Quick, Permanent Roofing

on any type of structure

TRUSCON FERROBORD® STEEL ROOFDECK

This strong, lightweight, steel roofdeck can be applied to any flat, pitched or curved roof structure. Large areas can be covered quickly. The members are so designed and formed that each unit firmly interlocks with the adjoining unit along the full length, achieving the maximum in lateral distribution of concentrated loadings. The members are fabricated in units long enough to span over three or more purlin spacings.

Ferrobord is manufactured from both 20-gage and 18-gage copper-bearing strip steel. Each unit is 6 inches wide and has a depth of either 1½" or 1¾". WRITE FOR FREE BOOKLET!

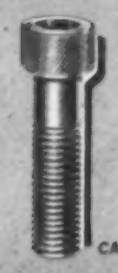
TRUSCON MARK OF MERIT PRODUCTS

TRUSCON STEEL DIVISION
REPUBLIC STEEL
1094 ALBERT STREET • YOUNGSTOWN 1, OHIO
Export Dept.: Chrysler Bldg., New York 17, N. Y.

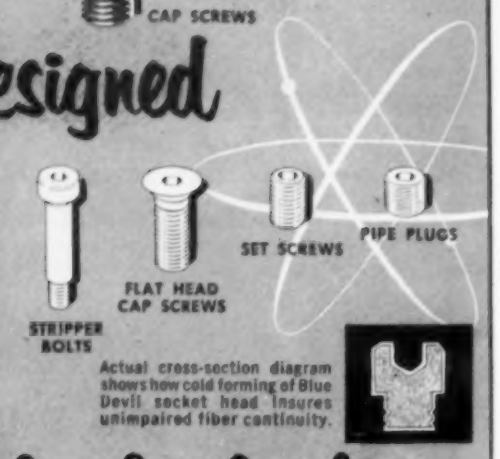
If you write maker identify as IEN - 6984

BLUE DEVIL

Better Designed



BLUE DEVIL SOCKET SCREW PRODUCTS
Key to the growing demand for these precision made Blue Devil fasteners is the strong emphasis we place on design—modern, functional, right for every requirement. They belong in *your* design picture, too!



SAFETY SOCKET SCREW COMPANY
6508 Avondale Avenue • Chicago 31, Illinois
SOCKET SCREWS EXCLUSIVELY!
SOLD ONLY THROUGH AUTHORIZED INDUSTRIAL DISTRIBUTORS

If you write maker identify as IEN - 6985

NEW SEALER HOLDS THEM!

Prevents Leaks . . . Protects Surfaces

This newly-developed polyhydroxylated plastic sealer adheres to any surface. Does not become hard or brittle. Holds at joints under 2,000 lbs. pressure. Use as a protective coating or as a pipe joint compound. Holds these chemicals and many others:

Dries but doesn't harden. Stays flexible.

- → VARSOL, DRIP OIL, CARBON TETRACHLORIDE
- → TRICHLORETHANE, CHLOROBENZENE, ETHYLENE DICHLORIDE
- → TRICHLORETHYLENE, TRICHLOROBENZENE, BENZENE
- → XYLENE, BUTANE, PROPANE
- → HEXANE, PETROLEUM NAPTHA, SILICONE OILS
- → PETROLEUM OIL, TOLUOL, GLYCERINE
- → SULPHUR DIOXIDE
- → WATER, "FREON", METHYLENE CHLORIDE
- → METHYL CHLORIDE, PERCHLOROETHYLENE, ORTHO-DICHLOROBENZENE
- → CUMENE, CYMENE, GASOLINE
- → JET ENGINE FUELS, FORMALDEHYDE, VEGETABLE OILS
- → KEROSENE, COAL TAR CHEMICALS, PAINT SOLVENTS
- → MOST NON-POLAR SOLVENTS, CHLORINATED SOLVENTS, AROMATIC SOLVENTS
- → AMMONIA

Leak Lock

Comes in 1⅓ oz. tubes (dozens), pint cans and 10 lb. cans. Order from your supply house. Highside Chemicals Co., 10 Colfax Ave., Clifton, N.J.

1. USE AS A PIPE JOINT COMPOUND . . . .
2. USE AS A PROTECTIVE COATING . . . . .

If you write maker identify as IEN - 6986

IMPROVED QUALITY—LOWER COST

Improved design . . . mass production techniques, give you a quality product, **properly priced.** Proven superior performance . . . extra strength . . . highly maneuverable . . . easy operation. Resinoid type casters and aluminum leader wheels at no extra cost.

Easily interchangeable forks available in five standard lengths. Adjustable on truck frame to provide 25" or 27" width.

Unconditionally guaranteed for one year. Write for descriptive bulletin

RACK HYDRAULIC EQUIPMENT CORPORATION
CONNELLSVILLE, PENNSYLVANIA
AGENTS IN PRINCIPAL CITIES UNITED STATES, CANADA, EUROPE

If you write maker identify as IEN - 6987

BOLTS & CAP SCREWS
SOCKET, SET & CAP
NUTS, WASHERS
MACHINE SCREWS
SHEET METAL SCREWS
WOOD SCREWS
PIPE FITTINGS

WRITE, WIRE or PHONE FOR YOUR CATALOG *Today*

- Class 3 Screws
- AN Drilled Fillister Heads
- AN WASHERS
- Studs, Standard & Special
- Special Screw Machine Products

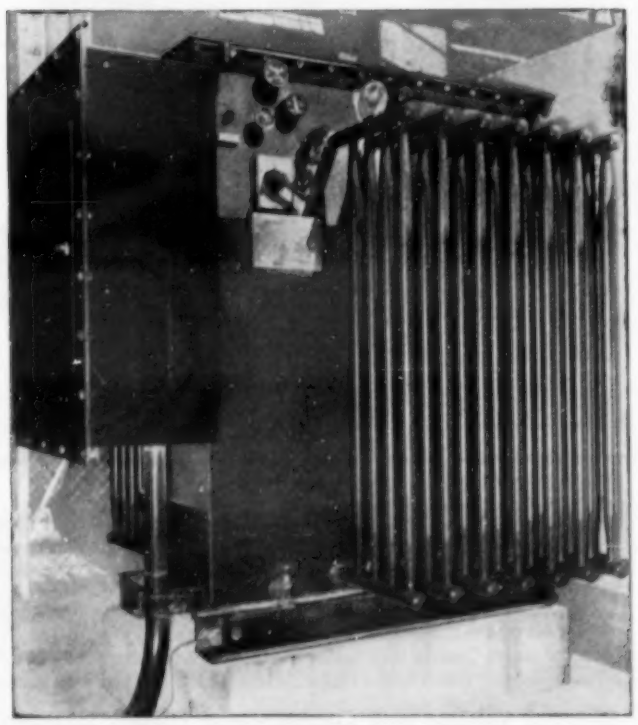
Star Stainless screws have
CLEAN, BRIGHT-AND-SHINY HEADS

Star STAINLESS SCREW CO.
ARmory 4-1240
212 Union Avenue • Paterson 2, N. J.
Direct New York Telephone: WIsconsin 7-9041

If you write maker identify as IEN - 6988

UPTEGRAFF
Power Transformer

HELPS SPEED EXPANSION PROGRAM AT MAYWOOD CHEMICAL WORKS



When additional electric power was needed to serve expanded facilities of the Maywood Chemical Works, Uptegraff was able to furnish the required type of transformer and meet the delivery deadline. The photograph above shows this transformer, a 750 KVA Power Unit, 4160 Grd.Y/2400—480 Delta Volts, 3 phase, 60 cycle. It includes provisions for adding thermometer controls to actuate cooling fans on radiators if needed for future load increase.

R. E. UPTEGRAFF MANUFACTURING CO.
SCOTTDALE, PENNSYLVANIA

If you write maker identify as IEN - 6990

FILTERING . . Coolant clarifier in capacities from 10 to 1,000 gpm.

Source: HENRY EQUIPMENT CO.
503 Button Wood Ave., Dept. IEN, Bowling Green, Ohio

Opens for cleaning

Coolant liquid, with entrained swarf, flows into one end of a pan formed by raised metal sides and ends and a stainless steel wire screen bottom in this new equipment. The screen is made of parallel inverted V-section wires to present slotted openings measuring 0.006 in. in width, too narrow for the swarf to pass through. Accordingly it collects on the screen and forms a filter bed through which the liquid passes to the settling tank beneath.

The swarf collects to a bed thickness that retards the flow a little. Then the liquid level rises to actuate a float controlled switch and a motor driven chain conveyor moves scrapers over the screen top. This carries the swarf toward the ramp at the discharge end, cleaning the screen so flow can be resumed.

The cycle is repeated at intervals of 15 to 30 min. depending on the swarf load. Clean coolant collects in the bottom tank. Drained swarf discharges over the end of the elevated ramp into a tote box for removal at intervals. Hydraulic and lubricating oils cling to the swarf and are removed with it. The smallest unit, rating 15 gpm., measures 2 by 4 by 3 ft. and weighs 425 pounds. It is driven by a ¼-hp. motor and lists at $695.

If you write maker identify as IEN - 6991

STORING . . Tool cabinet encloses sliding perforated panels

Source: HUOT MFG. COMPANY
565 N. Wheeler St., Dept. IEN, St. Paul 4, Minn.

24 square feet

Tuldex is a new design of cabinet in which six perforated hardboard panels are mounted vertically in channels so they can slide in and out. Panel dimensions are 12 by 18 inches. Tools are suspended from hooks located in the panel perforations. The cabinet is made of steel finished in blue and gray hammerloid baked enamel. A drawer at the bottom is for power tools.

The panels are mounted on individual tracks on self-lubricating nylon bearings. The doors swing on the same type of bearings. They move out of the way when they are fully opened. Built-in top and bottom locks are included. The cabinet can be mounted on a bench or hung from a wall or made part of a portable assembly. Overall dimensions are 29 by 26 by 13¾ in. for the new cabinet.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6992

NOW . . . More Speed At Lower Cost

HOBBS Automatic Production Cutter

Electronic measuring and precise controls give you accurate, automatic, low-cost operation!

Easily handles paper, plastic, cloth, etc. up to 60" wide from extruders, laminators, "in-process" operations, or from rolls and sheets. Feeds, controls, measures and cuts soft "in-process" materials to uniform sheet sizes. Process rate is 10 to 100 feet per minute, depending on length of cut. Material can be accurately slit and cut in one operation, with added slitting attachment. Special feeding and take-away devices available for any production set-up. Get the facts on this new machine—estimate your immediate savings. Write *now* for details.

HOBBS MANUFACTURING CO.
40 Salisbury St., Worcester 5, Mass.
New York Office: 132 Nassau Street
Chicago office: 549 West Washington Blvd.

Manufacturers of Modern Converting Machinery

If you write maker identify as IEN - 6993

SAFETY-PULL RATCHET LEVER HOISTS
10 roller-chain models — 1,500- to 30,000-lb. 2 coil-chain models — 1,500- and 3,000-lb.

CHALLENGER LIGHTWEIGHT ALL STEEL SPUR-GEAR HOISTS
3 models — ⅓-, 1-, and 2-ton

OTHER SPUR-GEAR HOISTS
22 models — ¼- to 25-ton

In hand hoists — *It's Coffing*

OVER 80 SIZES AND MODELS TO FILL ALL YOUR NEEDS

Mighty-Midget Pullers 2 sizes — 500- and 1,000-lb.

Hoist Binder 3,000-lb. capacity.

Safety Load Binders 2 models — 3,000- and 6,000-lb.

Low Headroom Hoists 12 models — 1½- to 24-ton

I-Beam Trolleys 21 models — ⅛- to 25-ton

Clevis-Connected Hoists 11 models — ¼- to 10-ton

Differential Chain Hoists 2 sizes — ½- and 1-ton

Extended Hand Wheel Hoists 6 models — ¼- to 3-ton

Army-Type Hoists (plain and geared) 11 models — ¼- to 10-ton

Ask for more information on the units you need from the most complete line of hand-operated hoists. Write Dept. P6.

COFFING HOIST CO. DANVILLE, ILLINOIS

If you write maker identify as IEN - 6994

Do You Know These Things About Glass?

Do you know, for instance, that glass can be heat resistant or heat absorbing or heat insulating; electrically conductive or nonconductive; patterned or plain; flat or curved; translucent or transparent or opaque?

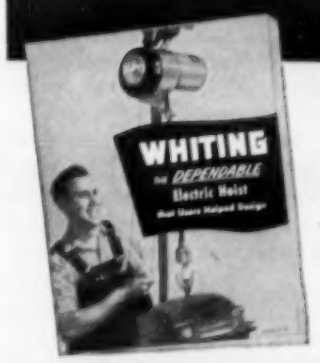
Libbey·Owens·Ford makes glass that can do all sorts of things . . . things that can save you money in your product or production process. Write today for your free 1954 edition of *L·O·F Glass for Product and Engineering Design.* Ask for SPD-54. Also ask for TF-8. Libbey·Owens·Ford Glass Company, Dept. 9264, 608 Madison Ave., Toledo 3, Ohio.

LIBBEY·OWENS·FORD GLASS COMPANY

If you write maker identify as IEN - 6995

LIFT at Lowest Cost!

GET THIS BOOKLET FOR FACTS ON THE HOIST THAT WILL SERVE YOU *BEST!*



Read *why* the Whiting Electric Chain Hoist is the *lowest* in operating cost . . . *why* it is the *safest* hoist and the *easiest* to operate. And read about the *exclusive* Whiting Warranty Plan, too. All this information, plus data on models and capacities is contained in Bulletin H-112. Write for a free copy now!

WHITING CORPORATION 15629 Lathrop Ave. • Harvey, Illinois

WHITING ELECTRIC CHAIN HOIST

If you write maker identify as IEN - 6996

If you write maker identify as IEN - 6997

Find Out About

PLATE THAT'S SHAPED TO SAVE YOU MONEY

You save both time and money using this new Steel Plate Shapes Service. Find out how you can start production several steps ahead. You can eliminate plate inventories, and you pay freight only on that part of the plate that is actually required.

There's no need to invest in new cutting and forming equipment for your own shops. We have over 150 major machines to flame-cut, shear, blank, press, bend or otherwise form steel plate.

This new Bulletin 712 shows how Steel Plate Shapes Service can help you. For a free copy, use this coupon or write on your company letterhead.

LUKENS BY-PRODUCTS STEEL CO.
A DIVISION OF LUKENS STEEL COMPANY

By-Products Steel Co.
Division of Lukens Steel Company
675 Strode Avenue, Coatesville, Pa.
Please send me a free copy of Bulletin 712.

NAME _____
TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

If you write maker identify as IEN - 6999

TRUCK . . Electric fork lift adds 14 in. to normal 127 in. lift

Source: LEWIS-SHEPARD INCORPORATED
125 Walnut St., Dept. IEN, Watertown 72, Mass.

The center ram acts first

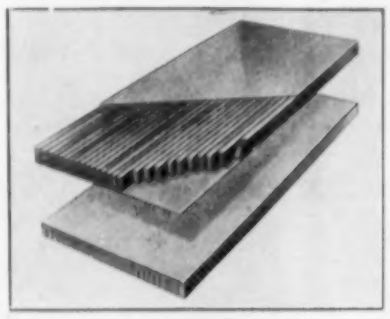
New carriage has been designed for the Spacemaster electric fork lift truck so the standard truck, with collapsed height at 83 in., can lift a load to a maximum of 141 inches. The carriage consists of an additional short mast section and an additional carriage riding on rollers in this section. The short mast is welded to the normal lifting carriage, adds 14 in. to the standard lift.

A center ram lifts the added carriage and forks to the top of the new section at the start of a lifting cycle. Then it and the outboard rams continue to rise, lifting the forks to the maximum 141 in. height. The truck will pass through doorways and enter highway trucks. It permits high stacking in storage. Normal capacities in the line are not altered.

If you write maker identify as IEN - 7000

FURNITURE . . Wood bench top, laminated construction, plastic faced

Source: STURDI-BILT STEEL PRODUCTS INC.
2501 W. Peterson Ave., Dept. IEN, Chicago 45, Ill.



Splinter proof

Graded, kiln dried lumber, accurately squared, sized, tongue and grooved in narrow widths is pressure glued to form the core of this new wood work bench top. The strips are faced with heat and pressure molded sheets made of sized wood aggregate mixed with a plastic binder. These sheets are dense and provide excellent resistance to abrasion and indentation. The completed top is sanded on all edges and faces and is given a glossy natural wood finish that is resistant to attack by oil and grease. Sizes range from 48 by 24 by 1½ in. to 96 by 36 by 2¼ inches. List prices range from $16.50 to $61.20 correspondingly.

If you write maker identify as IEN - 7001

Disston No. 100 Di-Mol Assortment designates a new box packed with a hundred 12-in. hack saw blades in a range from 14 to 32 teeth. Per blade price is 43.3 cents. Purchased individually, the blades are 54 cents. Source is Henry Disston & Sons Inc., 49 Tacony St., Dept. IEN, Philadelphia 35, Pa.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7002

THE NEW PROPANE
TORCH-O-MATIC
TRIGGER-CONTROLLED FLAME
SAVES GAS, TIME—PREVENTS INJURY

Here's the torch that lets you start instantly, select the flame for the job, shut off the flame when you're through, *all automatically!* Squeeze the trigger, flame ignites. Pull trigger back completely, flame lengthens from a fine pinpoint to a full 6 inches in length. Release trigger, flame shuts off.

You save time, gas, on every job. And you eliminate the hazard of open flame. Connects directly to your propane tank. Write for details.

VELOCITY POWER TOOL CO.
201 North Braddock Avenue, Pittsburgh 8, Pa.

If you write maker identify as IEN - 7003

DO YOU KNOW THESE FACTS ABOUT PRE-FINISHING?

Know how to keep your finishing process from becoming outdated? Switch to prefinished ENAMELSTRIP. A few facts about this pioneer process will show you it pays to finish the modern, ENAMELSTRIP way:

- Coats and colors metal before fabricating.
- Eliminates costly operations.
- Comes precision-slit to your specifications in a choice of metals.
- Non-anodized organic finish, withstands all Fabricating stresses.
- Finished in one, or two colors (one on each side).

GET ALL THE FACTS ON ENAMELSTRIP
in our new *full-color bulletin.* Send for yours today.

THE COATED COIL CORPORATION
511 West 30th Street, New York 1 • LOngacre 5-3161

If you write maker identify as IEN - 7004

It puts the Squeeze on Maintenance Costs!

A-C Current—five full scale ranges of 1000/250/100/25/10 amperes, with range overlap for good readability. Measurements under 10 amperes readily obtained.

A-C Voltage—three self-contained ranges of 700/350/175 volts insure accurate readability, in upper half of scale. Instrument insulated for 750 volt service.

Isolated Voltage and Current—with circuits insulated from each other, instrument can be connected to both voltage and current sources at same time

Convenient 6 position switch—easily operated with gloved hand, a flick of the thumb selects any current range, or the Volts position.

Adjustable pointer stop—red stop facilitates measuring starting current of motors.

Here's the instrument that produces big savings by slicing hours off maintenance schedules . . . produces worth-while revenue by forestalling costly repairs and shutdowns. Built to WESTON standards of safety, accuracy and dependability. Also available for A-C Ampere measurement only. Order through your local representative, or write . . .

WESTON Electrical Instrument Corporation, 617 Frelinghuysen Ave., Newark 5, N. J.
. . . manufacturers of Weston and Tagliabue instruments.

WESTON *Instruments*
9566
. . . TO INDICATE—RECORD—CONTROL

If you write maker identify as IEN-7006

NO MORE CARBON SCRAPING

Dunk & Drier Basket Included

Nothing Decarbonizes and Cleans CYLINDER HEADS, CARBURETORS, PARTS Like...

*U. S. Pat. No. 2,318,842
New 6½ gal. size deep "Vapor-catcher" design pail

The More Potent*
GUNK HYDRO-SEAL

1. Faster . . . Terrific penetration . . . New improved odor.
2. Quickly digests and removes carbon gum, paint, lead; makes possible accurate visual inspection and fitting of delicate metering mechanisms, jets, orifices, and diesel nozzles . . . without etching.
3. Lasts more than one year . . . due to water blanket.
4. Works cold . . . Rinses wet or dry.
5. Patented Double Barrel Performance Guaranteed.

A WORD OF CAUTION
If it doesn't bear the Genuine GUNK trademark, it may be a partly diluted imitation — and will not give you the Safety and Advantages of Genuine GUNK and should be flatly refused.

SOLD BY BETTER JOBBERS EVERYWHERE
Write for Name of Nearest Stocking Jobber
— Flatly Refuse Substitute Imitation —

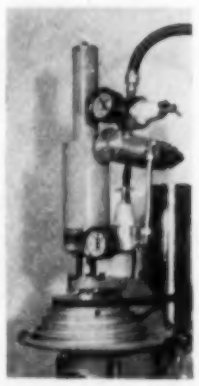
IMMEDIATE DELIVERY
1 PINT OR A TANK CAR

CURRAN CORP.
Mfg. Chemists
LAWRENCE, MASS.

120 South Canal Street

If you write maker identify as IEN-7007

ROTAFEED AUTOMATIC POWER FEED
makes 2,000,000 DRILL PRESS FEEDS obsolete!



Attaching directly to the spindle, ROTAFEED produces more holes per hour than any other type of feed. Lower air consumption further "sweetens" the profit picture. Increase your profits by installing or replacing with ROTAFEED, the world's fastest feed for drill presses. Completely automatic, the ROTAFEED package includes solenoid valve, pressure regulators and gauges, filter-lube unit, air hose with fittings and electrical controls.

A Pneuma-Draulic engineer is ready to assist you.

THE PNEUMA-DRAULIC COMPANY
Box 666, Detroit 6, Mich.

If you write maker identify as IEN-7008

SAUEREISEN NO. 66

SUPER SEALING VARNISH

For Interior and Exterior Use

A translucent, amber-colored, resin base varnish for sealing all pores on wood, cement, brick, stone, metal and any other surface that may be painted. Forms a tough, elastic film which will not crack, peel, or scale. Resists acids, alkalies, moisture, gasoline, oil, electricity, and temperatures, up to 500° F. Ready for use as it comes from the can, this super varnish may be applied by brushing or spraying and dries with a high gloss. Also suitable as a binder for other materials.

Recommended for use on:

- Appliances
- Beams
- Coils
- Ducts
- Floors
- Furniture
- Instruments
- Linoleum
- Machinery
- Pumps
- Resistors
- Sumps
- Tanks
- Walls
- Woodwork

Special Trial Order 1 gal. for $6.80

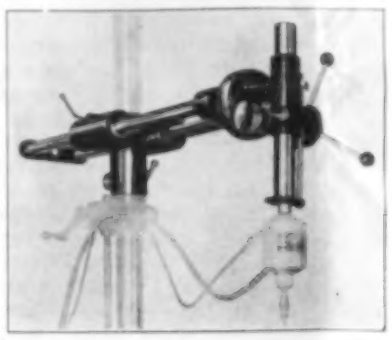
FREE CATALOG WITH EACH ORDER.
SEND TO DEPARTMENT IEN:

SAUEREISEN CEMENTS COMPANY
PITTSBURGH 15, PENNSYLVANIA

If you write maker identify as IEN-7009

EXTRACTING . . Metal disintegrator to remove broken taps, studs, reamers

Source: ELECTRO ARC MFG. CO.
P. O. Box 448, Dept. IEN, Ann Arbor, Mich.



Specifications on request

The company announces availability of a new cross arm assembly for use on its column type metal disintegrator, previously described IEN-12949-52. The new arm provides rigid support for the operating head, easy transverse adjustment on its two tubular supports that ride in linear ball bearings, independent angular adjustments in horizontal and vertical planes and gravity feed for the operating head. All of these points assist in duplication of setups and in adapting the machine to special work.

The machine itself connects to a 110-volt ac. power source and to a water line. An electrode is positioned in the head and current is supplied to it from the power unit enclosed in the machine housing. This causes sparking, as the head reciprocates through a minute distance to make and break the circuit. The sparking action disintegrates the metal ahead of the electrode without heating the surrounding metal. Water is directed to the work through the hollow electrode to wash the spark particles away. Current and water adjustments can be made so the unit requires no attention after it has been set up until it has penetrated to a required depth.

The quill assembly, in the swivel casting at the end of the new cross arm unit, carries the operating head and permits 9 in. of continuous gravity feed. Twenty inches can be provided to specification. Weight of the quill and head is counter balanced by an adjustable spring to control the rate of feed. An adjustable stop is provided for feed length. A pilot wheel permits quick raising and lowering.

If you write maker identify as IEN-7010

CONTROL . . Electronic instrument holds vacuum at predetermined setting

Source: HASTINGS INSTRUMENT CO.
Super Highway at Pine Ave., Dept. IEN, Hampton, Va.

Also sounds alarm

Illustrated is new controller design of the company's electronic vacuum gage, previously described IEN-3683-50. It can be set to hold vacuum at a desired point between 1 and 1,000 microns of mercury. Operation is on 110-volt ac. Assembly is in a housing 14 by 8 by 8 inches. Weight is 14 pounds.

The instrument employs a noble-metal thermopile and bridge circuit. It is free from outgassing and system contamination. The gage tube is not affected by release to atmospheric pressure or by change in ambient temperature.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7011

A PAID NEWS ADVERTISEMENT BY HYPRO ENGINEERING, INC.

ROLLER PUMP . . .

Hypro Model 4500 with Ni-Resist case handles wettable powder solutions.

New HYPRO Model 4500 Roller Pump with Ni-Resist Case

A new, industrial pump that has demonstrated high efficiency in handling wettable powder solutions in three seasons of field testing has now been marketed by HYPRO ENGINEERING, INC., Minneapolis pump manufacturers. The unit, called the HYPRO 4500 Roller Pump, is equipped with scoop rotor and "roller-type" vanes and embodies unique design features. The roller design is specially suited for use where suspension powders in liquids are pumped.

Equipped with a Ni-Resist Case for longer life and greater efficiency, the HYPRO 4500 Pump is engineered to withstand continuous heavy radial loads through the use of sealed lubricated ball bearings. An additional feature is pressed fit of the stainless steel shaft into the inner race of ball bearings to restrict lateral movement of the rotor, minimizing end thrust and wear of the rotor within the pump.

Nylon or Hy-Car rubber rollers (optional) are self-lubricated by the liquid pumped and are highly abrasive resistant. The HYPRO 4500 Roller Pump is self-priming with wet impeller and will deliver approximately 5¾ gallons per minute at 100 lbs. pressure at 1750 RPM. Pressure range is from 0 to 150 P.S.I. Weight is only 4½ lbs. net.

For complete information and prices on the HYPRO Model 4500 Roller Pump, write Dept. 103, HYPRO ENGINEERING INC. 404 No. Washington Ave. Minneapolis 1 Minnesota.

If you write maker identify as IEN-7012

Here's how! Place an Allis-Chalmers Electronic Metal Detector on your conveyor line. Metal in material passing through aperture of detector triggers a warning or reject mechanism into instant action. Material may be traveling at rate of 15 to 600 fpm.

Whether stray metal is magnetic or nonmagnetic, sitting on top or buried deep, Allis-Chalmers Electronic Metal Detector finds it. It costs but a few pennies per day to operate.

Get complete information. Call your nearby A-C office, or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-4370

ALLIS-CHALMERS

If you write maker identify as IEN-7013

Next Time
Job-Fit Industrial Tires by Size · Tread · Compound

For tops in traction, get Goodyear's even-wearing All-Weather Tread Industrial Solid, shown above.

All-Weather Tread

HERE's how to cure the headaches that come from using the wrong industrial tires. Call your Goodyear Dealer and let him specify the "right tire for the right job." Let him show you how to get top performance from your industrial tires by job-fitting them these three ways:

Right Size for your equipment. Goodyear has over 100 different solid tire types and sizes plus a full line of pneumatic and semi-pneumatic tires — America's most complete line of industrials.

Right Tread for your plant's floor surfaces. Smooth and Grooved for easy rolling. All-Service or the famous All-Weather, wherever traction is needed.

Right Compound for longer tire life. Goodyear offers you a choice of either UNiversal chip-resistant or Neoprene oil- and acid-resistant compound at no extra cost.

Make the first step towards industrial tire savings in your plant by calling your Goodyear Dealer today. Or write:
Goodyear, Industrial Tire Sales,
Akron 16, Ohio

Smooth Solid

All-Service Tread Xtra Cushion

Rib All-Weather Pneumatic

Semi-Pneumatic Cushion

USE THE RIGHT TIRE FOR THE RIGHT JOB—USE
GOODYEAR
INDUSTRIAL TIRES
All-Service, All-Weather, Xtra Cushion—T. M.'s
The Goodyear Tire & Rubber Company, Akron, Ohio

If you write maker identify as **IEN - 7015**

Actual length of welds: E-6012—5 1/16", Easyarc 12—12". **Current settings:** 230 amps AC for E-6012, 275 amps AC for Easyarc 12. Both welds made in 1/4" mild steel plate with 3/16" diameter electrodes.

Write for "Pocket Guide to Airco Electrodes."

AIR REDUCTION
60 E. 42nd Street
New York 17, N. Y.

Divisions of Air Reduction Co., Inc.
Air Reduction Sales Co.
Air Reduction Magnolia Co.
Air Reduction Pacific Co.
Represented internationally by Airco Company International

If you write maker identify as **IEN - 7016**

Free to motor users

New 16-page booklet

PACKED WITH FACTS ABOUT

VARIABLE SPEEDS

Here's a booklet that presents startling facts about variable speeds. It tells how to apply U. S. Varidrive motors to your equipment, ways to get more productive man-hours, methods of improving quality of workmanship, more efficient plant operations, and lists savings you can make in power and payroll. This valuable engineering booklet is profusely illustrated in striking colors. It details latest improvements and shows how you can have speeds from 2 to 10,000 rpm at your command. Illustrates 28 Varidrive models. 1/4 to 50 h.p. Request this amazing 16-page booklet for latest data on variable speeds.

U.S. VARIDRIVE

—The miracle motor

U. S. ELECTRICAL MOTORS Inc.
Los Angeles 54, Calif. Milford, Conn.

REQUEST FOR VARIDRIVE BOOKLET

U. S. ELECTRICAL MOTORS INC. IEN-6
Box 2058, Los Angeles 54, Calif., or Milford, Conn.

NAME _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

If you write maker identify as **IEN - 7018**

DRYING . . Desiccant dehydrator for operating air to isolated devices

Source: HANKISON CORPORATION
951 Banksville Road, Dept. IEN, Pittsburgh 16, Pa.

Model CM-1

Capacity is to 1 cfm. at 100 lb. and 70 deg. F. for this new Dehydrafilter. It is designed for installation in an air line just ahead of an isolated instrument or air operated device that requires a dry air supply. It will provide dew point as low as minus 67 deg. F. It takes the place of electrical or steam tracing on outdoor air lines serving isolated level controllers, purge assemblies, pneumatic instruments.

Compressed air, from a supply source, enters the brass housing through a head made of the same material. The air flows downward around a plastic coated aluminum cartridge containing the desiccant. It passes through the desiccant bed and back up to the outlet connection. It flows through a visual saturation indicator that enables an operator to know when the desiccant cartridge requires regeneration.

If you write maker identify as **IEN - 7019**

TRUCK . . Load clamping attachment designed to handle crated appliances

Source: YALE & TOWNE MFG. CO.
11000 Roosevelt Blvd., Dept. IEN, Philadelphia 15, Pa.

Details upon request

Metal fingers slide under a crate at the bottom of this new hydraulically operated attachment. Two clamps press down upon the crate from the top to hold it for movement and stacking. The top clamps reverse so the attachment will open to handle crates ranging from 38 to 75¼ in. in height. Two clamp positions cover ranges from 38 to 57 in. and from 57 to the maximum 75¼ inches. Actuation is by a hydraulic cylinder with a 19-in. stroke. Control centers at the operator's position on the truck.

If you write maker identify as **IEN - 7020**

Use the new Hydry Non-Skid Ink to print the bags, sacks, cartons in which you package your products and you will have accomplished a double purpose. You will have identified the containers and also they will ride without slipping on pallets or on each other. The ink is particularly suited for manufacturers of cement, chemicals, fertilizers, feed, materials of powdered and granular form. Ask for a sample sheet with a patch of plain ink and of the new ink so you can see for yourself. Ask Sun Chemical Corp., 10th St. & 44th Ave., Dept. IEN, Long Island City 1, N. Y.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7021**

If you write maker identify as **IEN - 7022**

Lindberg Mill Type Cylinders are heavy, tough cylinders . . with plenty of guts built in. They'll handle the meanest and most demanding job you can think of, and they'll perform dependably under the most adverse operating conditions.

Lindberg also builds a standard catalog line of heavy duty air and hydraulic cylinders . . up to 12". Hydraulic Cylinders available in 1500 and 3000 PSI. Ask for bulletin #731 (air) . . #701 (hydraulic).

LINDBERG AIR . . HYDRAULIC CYLINDERS
Lindberg Engineering Company, 225 No. Laflin St., Chicago 7, Ill.

If you write maker identify as **IEN - 7023**

"TIP WRENCH"— SOCKET POCKET-WRENCH GETS NUTS, BOLTS And SCREWS Into "Hard-To-Get-At" Places— HOLDS THEM FIRMLY WHILE TIGHTENING

Or, "TIP WRENCH" goes in and unloosens them and takes them OUT. "TIP WRENCH" is built to work in deep. Holds Nuts, Bolts and Screws where fingers can't hold them. With "TIP WRENCH" you can stop fumbling and save valuable minutes in either REPAIR or LINE PRODUCTION WORK . . . In total, it SPEEDS THE JOB—SAVES THE COST MANY TIMES OVER.

NEEDED IN EVERY TOOL BOX

1. It grips — starts — tightens (or loosens). Just one setting.
2. It GRIPS FIRMLY. A nut or bolt won't slip or turn. For screws, the screw driver blades—one in each jaw—engage the slot in the screw head.
3. By thumb pressure on the plunger head, the jaws slide out and OPEN, the nut, bolt or screw is inserted, gripped firmly and the user is ready to go in and complete the job.
4. "TIP WRENCH" is a TOUGH TOOL—for TOUGH JOBS. Built of finest materials and precision manufactured . . . It's RUST PROOF, too.
5. SHOCKPROOF. Has a tough Vinylite insulated shank.
6. Knurled—Hardened Steel Jaws slide in form-fitting barrel which "take the pressure" when tool is in use.
7. Capacity: No. 2 to No. 12 Nut or Screw.

ORDER A SET

THREE CONVENIENT SIZES:
No. 1 Capacity: No. 2 to No. 8 Nut or Screw ..... 8½"
No. 2 Capacity: No. 6 to No. 12 Nut or Screw ..... 8¾"
No. 3 Capacity: No. 6 to No. 12 Nut or Screw 4½"
EACH **$1.35**

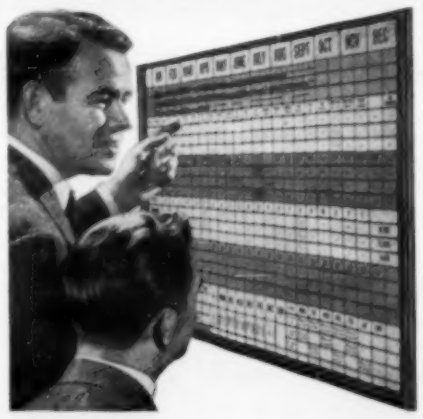
ORDER THROUGH YOUR JOBBER . . . If he cannot supply immediately, ORDER DIRECT—but GIVE US YOUR JOBBER'S NAME . . . Write For Literature.

Sold on A Money-Back Guarantee

Address: "TIP WRENCH" DIVISION
SMITH HEAT TREATING CO.
5865 Wilmington Ave. Los Angeles 1 Cal.

If you write maker identify as **IEN - 7024**

You Get Things Done Quicker, Better With the Boardmaster Visual Control



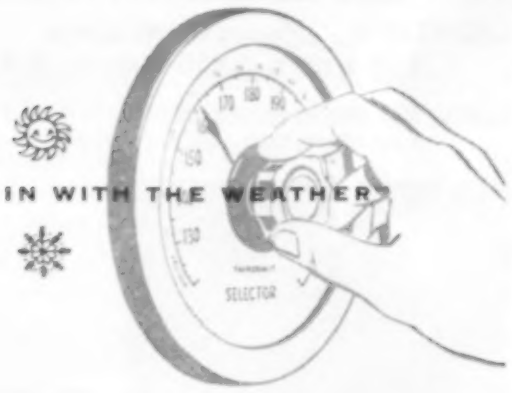
- ★ Graphic Picture of Your Operations—Spotlighted by Color
- ★ Facts at a Glance—Saves Time and Eliminates Confusion
- ★ Simple and Flexible — Easily Adapted to Your Operations
- ★ Easy to Operate—Type or Write on Cards, Snap on Board
- ★ Ideal for Production, Scheduling, Inventory, Traffic, Etc.
- ★ Compact, Attractive. Made of Metal. Over 50,000 in Use.

Complete Price $49.50 Including Cards

FREE 24-Page ILLUSTRATED BOOKLET E-200 Without Obligation

GRAPHIC SYSTEMS, 55 West 42nd St., New York 36

If you write maker identify as IEN - 7025



illinois Selectotherm

Investigate this modern development in automatically controlled heating!—a high vacuum steam heating system with "single dial control" that assures the ultimate in comfort, economy and convenience. Heat supply is balanced against heat loss to provide an even and constant warmth that is always exactly right.

Ideal for schools, hospitals, churches, apartments, commercial and public buildings *of any size*—either new or existing—where boilers are used for low pressure steam heating only—with any type of fuel and any form of mechanical firing device.

Write for Bulletin 540 and learn how Selectotherm reduces fuel consumption and saves 20% or more compared to ordinary systems.

ILLINOIS ENGINEERING COMPANY
2037 SOUTH RACINE AVENUE
CHICAGO 8, ILLINOIS

DIVISION OF AMERICAN AIR FILTER COMPANY, INC.

If you write maker identify as IEN - 7026

For Easiest Pipe Work ...it's the New 20 RIDGID

8 sizes for pipe from ⅛" to 6"

More utility for your money in RIDGID Bench Vises

RIDGID Chain Bench Vise, ⅛" to 8"

• No wonder this bench yoke vise is popular everywhere! You can make the yoke open for either right or left hand. It has an integral pipe rest for easier cutting or threading . . . built-in pipe bender . . . strong special malleable yoke and base . . . LonGrip jaws of top quality tool-steel. You simply can't beat it for efficient easy operation that lasts for years! Buy it at your Supply House.

Same work-saver features in RIDGID post, kit and stand yoke vises and bench, post and stand chain vises.

See us at Western Plant Maintenance Show, Booths 639, 643.

THE RIDGE TOOL COMPANY • ELYRIA, OHIO, U. S. A.

RIDGID
Work-Saver Pipe Tools

If you write maker identify as IEN - 7028

SCAFFOLD . . Tubular aluminum unit serves as base for Fold-A-Way sections

Source: PATENT SCAFFOLDING CO.
38-21 12th St., Dept. IEN, Long Island City 1, N. Y.

Assembles quickly

Ladder frames, forming the two ends of this new Extra-Wide scaffold section, are 54 in. in width and 48, 64 and 72 in. in height. Side braces, that join the ends, can be moved to the top three rungs for clearance vertically to 70 inches. Maximum clearance of 70 by 108 in. is available when the new unit is employed by itself. Braces provide spans of 72, 96 and 120 inches. The new unit, as well as the previously developed Fold-A-Way sections, can be equipped with the new safety ball bearing extension legs that provide 24 in. of vertical adjustment.

If you write maker identify as IEN - 7029

VALVE . . Adjustable poppet design limits delivery with free return

Source: RIVETT LATHE & GRINDER INC.
22 Riverview Road, Dept. IEN, Boston 35, Mass.

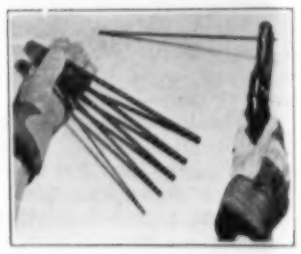
Specifications upon request

New valve is assembled in an anodized aluminum body of hexagon cross-section to apply in a line leading to a cylinder or machine. Flow to the equipment served can be adjusted to a desired rate. At the same time, the nylon poppet permits free return. Adjusting nuts are mounted on the outside of the hexagon body. The valve is suited for 150-lb. air or 300-lb. oil or water. The new ⅜-in. size measures 3 in. in length by 1⅛ in. across the hexagon body. Weight is 6 ounces. The unit is known as Model 3620. It lists at $6.25.

If you write maker identify as IEN - 7030

HARD FACING . . Arc electrode to protect against abrasion, impact

Source: WALL COLMONOY CORP.
19345 John R St., Dept. IEN, Detroit 3, Mich.



Easily applied

Chromium, boron and iron are combined in a new general service hard facing electrode that is now available in two types. Number 1 is for use where extreme impact is combined with high resistance to abrasion. Special No. 1 is a similar material but somewhat harder and more resistant to abrasion and impact.

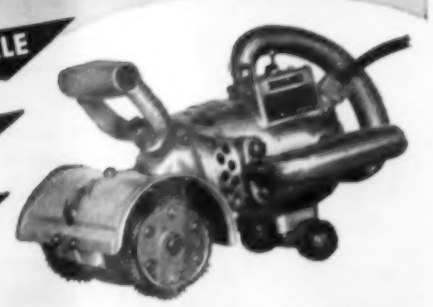
Applications include hard facing dipper teeth, bucket lips, drag chains, mill hammers, crusher parts, grader blades, shot blasting equipment, fan blades, ash plows, coal and coke chutes, dredge cutters. Three electrode sizes are ⅛, 5/32 and ¼ inch.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7031

ZIP OFF

SCALE
RUST
PAINT
with



AURAND CLEANING TOOLS

ELECTRIC or PNEUMATIC

AURAND rotary chipping action quickly, easily, *thoroughly* removes scale, paint, rust, and other accumulation from any hard surface. Renewable cutter heads and fool-proof cutting depth adjustment allow the unskilled operator to produce perfectly clean surfaces. Available in electric or pneumatic models. Write today for further information on cleaning your iron, steel, brick, concrete, and other hard surfaces.

Get the time and money-saving facts

GET THE TIME AND MONEY-SAVING FACTS
WRITE TODAY TO DEPT. 649

AURAND MFG. & EQUIP. CO.
2643 Colerain Avenue • CINCINNATI, OHIO

If you write maker identify as IEN - 7032

Easy way to handle heavy storage bins

You'll save time and effort . . . work with greater ease . . . in moving heavily loaded bins in and out of storage.

Cradled in Roller Bearing Slides, bins roll out at a finger's touch—contents are immediately accessible. It's much faster and easier to remove or refill bins; to count or weigh contents. Stops prevent slide from being pulled out more than halfway, bins cannot fall out or spill contents.

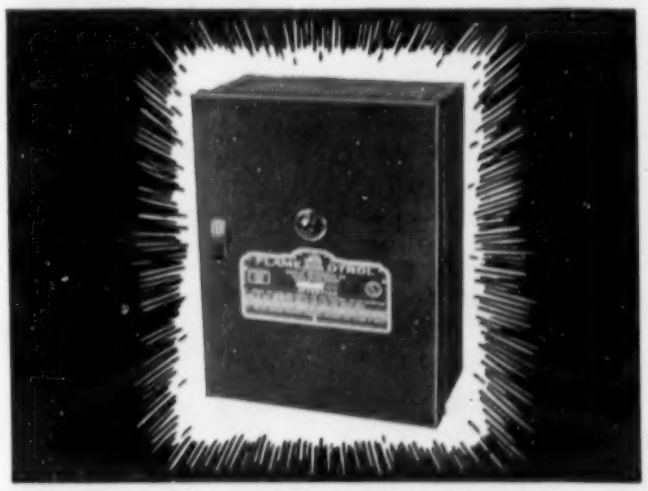
Roller Bearing Stackracks® are individual units that lock together to form storage units of any size, shape or height. Completely flexible, they can be re-arranged quickly, without using tools. Get all the facts! Write for catalog.

STACKBIN CORPORATION
1077 Main Street
Pawtucket, R. I.
In Canada: Wickwire-Stackbin, Ltd., Ottawa

STACKBIN® SYSTEM
"Stacked and Still Accessible"

If you write maker identify as IEN - 7033

BARBER COLMAN Wheelco Flame-otrols



Combustion Safeguard Problems?
Let Wheelco solve them!

With all types of conventional combustion safeguard systems available from one source, Wheelco engineers are in the enviable position of making impartial suggestions. Systems are engineered to your requirements. You can place full confidence in their recommendations. Write for Flame-otrol Bulletin F2-3.

WHEELCO INSTRUMENTS DIVISION
Barber-Colman Company • Dept. F, 1516 Rock Street, Rockford, Illinois

If you write maker identify as IEN - 7034

"After testing all types . . . we standardized on Magcoa Dockboards"

Says James McCabe, Chief Industrial Engineer, American Maize-Products Co., Roby, Indiana — "Before standardizing on Magcoa Dockboards," says Mr. McCabe, "we tried all types—both heavy-metal and another type of light-metal, 'home-made' and specially made.

"Cost records for our 31 Magcoa Dockboards, used on both truck docks and rail docks," continues Mr. McCabe, "show a measurable savings of more than $2500 a year in labor, truck and tire maintenance—plus an immeasurable employee relations benefit because our Magcoa Dockboards are safe and save strain. They actually paid for themselves in their first three years of service."

Write for a copy of the new Magcoa Facts File.

MAGNESIUM COMPANY OF AMERICA
MATERIALS HANDLING DIV. • EAST CHICAGO 14, IND.

If you write maker identify as IEN - 7035

Increased Insulation
BETTER CONNECTIONS
JONES BARRIER TERMINAL STRIPS

Leakage path is increased — direct shorts from frayed terminal wires prevented by bakelite barriers placed between terminals. Binder screws and terminals brass, nickel-plated. Insulation, BM 120 molded bakelite. Finest construction. Add much to equipment's effect.

Jones Means Proven Quality

Illustrated: Screw Terminals — Screw and Solder Terminals — Screw Terminal above Panel with Solder Terminal below. Every type of connection.

Six series meet every requirement: No. 140, 5-40 screws; No. 141, 6-32 screws; No. 142, 8-32 screws; No. 150, 10-32 screws; No. 151, 12-32 screws; No. 152, ¼-28 screws.

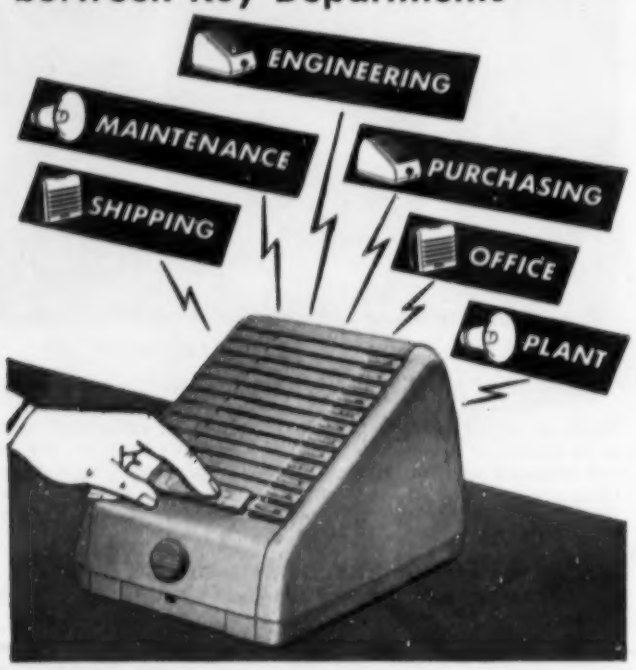
Catalog No. 20 lists complete line of Barrier Strips, and other Jones Electrical Connecting Devices. Send for your copy.

Jones
HOWARD B. JONES DIVISION
CINCH MANUFACTURING CORPORATION
CHICAGO 24, ILLINOIS
SUBSIDIARY OF UNITED-CARR FASTENER CORP.

If you write maker identify as IEN - 7036

Step Up Production

with faster communication between Key Departments



EXECUTONE Intercom puts every department at your fingertips—*instantly!*

Production moves faster when you don't have to wait for information. With Executone you talk to any department, anywhere in your office or plant—*instantly!* No time lost running back and forth. No waiting on "busy" inside phones. You get more work done—*faster!*

In the NEW Executone voices are amazingly crisp and clear. Installed and serviced by Executone-trained technicians. Low cost Executone soon pays for itself in dozens of ways.

Executone
INTERCOM SYSTEMS

GET THE FACTS

EXECUTONE, INC., Dept. F-9
415 Lexington Ave., New York 17, N. Y.

Without obligation, please send me full data on Executone Intercom. I am particularly interested in:

☐ INTER-OFFICE COMMUNICATION
☐ INTRA-PLANT COMMUNICATION
☐ MATERIALS HANDLING CONTROL
☐ SWITCHBOARD RELIEF
☐ INVENTORY CONTROL
☐ LOCATING PERSONNEL

Name.....Title.....
Firm.....
Address.....City.....

In Canada—331 Bartlett Ave., Toronto

If you write maker identify as IEN - 7038

LIGHTING . . Portable floodlight is pressurized for hazardous locations

Source: SAFE LIGHTING INC.
91-13 Astoria Blvd., Dept. IEN, Jackson Hghts. 70, N. Y.

Safe to use anywhere

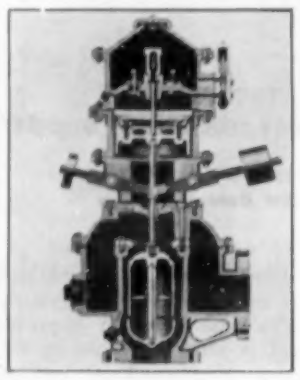
Water, air, gas cannot get into the interior of this new explosion proof portable floodlight, partly because of the construction of its Formica body, aluminum reflector and sealed lens and partly because the interior is pressurized with air at 11 pounds. The pressure is applied through a Schrader air valve. Over-pressure is prevented by a relief device that opens at 25 pounds. Loss of pressure, which might result in a dangerous condition, is prevented by a pressure operated switch that opens the light circuit at 3½ pounds. The unit employs a medium base socket and a 100 watt lamp.

Three Formica parts, molded and precision machined, include the switch housing cap, the switch body and the reflector adaptor plate. An aluminum lens guard protects the 7½-in. Kopp glass lens. The assembly carries Underwriters' Laboratories approval and listings for Class I, Groups A, B, C and D hazardous locations.

If you write maker identify as IEN - 7039

VALVE . . Float operated design vents air and prevents water hammer

Source: SIMPLEX VALVE & METER CO.
6717 Upland St., Dept. IEN, Philadelphia 42, Pa.



Also admits air

New valve, Type CCAV, is fitted with a 4-in. bottom flanged inlet to mount on a standard pipe line tee and to connect to a 4-in. overflow outlet line. Initial filling of a pipe line, on which the valve is mounted, results in flow of air upward and around the float in the main body to the outlet connection. When water reaches the float, it rises and shuts off further flow.

The rising action is retarded by a piston assembly in a chamber above the main body. The space above this piston and beneath four poppet valves is filled with non-freezing liquid. The valves prevent this liquid from moving upward so it must flow through an adjustable needle valve at one side. The valve setting determines the speed with which the float can move upward to close the main outlet. The poppet valves open, in reverse direction, so the piston does not retard the opening action of the combination float and valve disc. Adjustable counter weights apply on the valve stem to set the action for given operating conditions.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7040

Now A REAL . . . HUSKY . . . FULL SIZE SPECIFICATION SWITCH BUILT TO DO A FULL SIZE JOB CONTINUOUSLY

P&S 20AC1

IF you need switches that can be used at full rated capacity on fluorescent and incandescent loads

IF you need switches that stand up under continuous heavy duty use

IF you want to cut down replacement costs on heavy duty circuits

YOU'LL LIKE THE WAY P&S A.C. SUPER SWITCHES HANDLE THE JOB

Both 15 and 20 Amp. types can be used on 120 V. to 277 V. fluorescent and incandescent loads at full rated capacity — can be used on motor loads up to 277 V. at 80% of switch rating.

Extra large silver alloy buttons will not oxidize under constant service, keeping temperature rise (common cause of switch failure) at a minimum.

Sturdy, totally-enclosed bodies — Easy back or side wiring — built "to take it." S.P., D.P. and 3-W, Ivory and Brown, 15 and 20 Amp. types, A.C. only.

For complete information write Dept. IN

PASS & SEYMOUR INC. SYRACUSE, N. Y.
OFFICES: 71 Murray St., New York 7, N. Y.
1229 W. Washington Blvd., Chicago 7, Ill.

If you write maker identify as IEN - 7041

LIGHTING . . Fluorescent lamp, 110 watts, 6,800 lumens in 96 inches

Source: GENERAL ELECTRIC CO.
1 Nela Park, Dept. IEN, Cleveland 12, Ohio

List is $3.85 plus tax

New lamp, now in limited production, measures 96 in. in length by 1½ in. in diameter. It employs a new base design with two contacts recessed in a single element for application in a new design of push-pull lamp holder. It is intended for new fluorescent lighting installations. It is not suited for replacement in existing ones unless new lamp holders also are installed.

The lamp is rated at 110 watts for a total light output of 6,800 lumens. It is standard white color. The rated life is 7,500 burning hours.

If you write maker identify as IEN - 7042

SEPARATING . . Centrifugal purifier takes dirt and moisture from air line

Source: V. D. ANDERSON COMPANY
1935 W. 96th St., Dept. IEN, Cleveland 2, Ohio

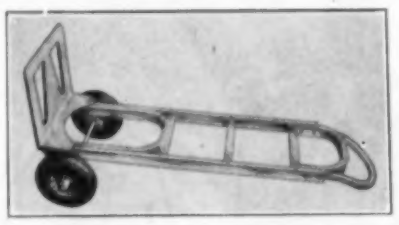
Installs near an air tool

Cylindrical housing, about twice the diameter of the pipe line in which it assembled, encloses a combination of vanes and baffles to throw dirt and moisture out of an air stream to an outlet pocket that can be connected to a trap. The unit length is about four times the diameter. Threaded connections are provided in both ends for assembly in the pipe line. The separator is available in any pipe size for vertical compressed air lines. It is supplied in 1 and 2 in. pipe sizes for horizontal lines. List for a ¾-in. vertical unit is $13.75.

If you write maker identify as IEN - 7043

TRUCK . . Two wheel hand design with magnesium frame and wheels

Source: MAGLINE INCORPORATED
1950 Mercer St., Dept. IEN, Pinconning, Mich.



Type 12-H-802

Weight of this new truck is 16 lb. when its magnesium wheels are equipped with solid rubber tires. Weight increases to 20 lb. with standard semi-pneumatic tires as shown in the illustration. The truck is made of the company's Magliner component parts without welding so any part can be replaced from factory stock if replacement is ever required. The shovel type nose measures 12 in. in length and is designed particularly to handle bulky packages and cartons as well as loads of irregular shape.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

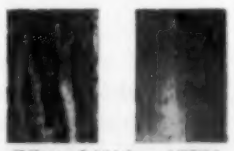
If you write maker identify as IEN - 7044

You Can Finish any Metal
BETTER for LESS
with
VINSYNITE PRETREATMENT

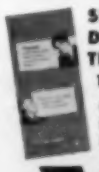
BETTER . . . because Vinsynite combines a chemical pretreatment with a thin film of organic coating. Result is superior adhesion and corrosion-resistance.

FOR LESS . . . because Vinsynite can be applied by ordinary painting methods. No expensive chemical control, heating, water baths or special equipment is required.

Vinsynite works efficiently on any metal. It makes finish coats last longer. Let us send you specific test data and case histories to prove it!



Effect of 500 hrs. ASTM salt spray on oleoresinous paint over bare steel (left); and same paint over Vinsynite (right).



SPECIALTY COATINGS, INC.
Division of
THOMPSON & COMPANY
1000 Allegheny Ave., Oakmont, Pa.

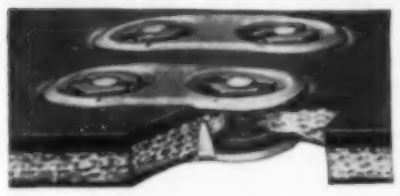
GET THIS FREE BOOKLET. It tells how Vinsynite is solving paint adhesion and corrosion problems for many manufacturers.

Vinsynite
COMBINES PROTECTION AND ECONOMY

If you write maker identify as **IEN - 7045**

BELT FASTENING . . Molded design with beveled plates to clear scrapers

Source: FLEXIBLE STEEL LACING CO.
4607 Lexington St., Dept. IEN, Chicago 44, Ill.



Bulletin F-108

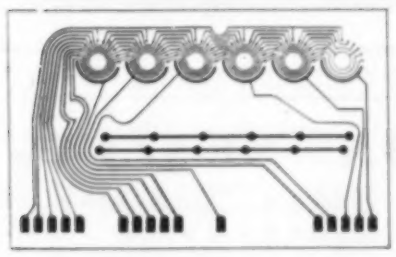
Conveyor belts, $\frac{1}{16}$ to ½ in. in thickness, can be connected on centers to a maximum of 500 ft. by this new Flexco Scraper Plate fastening. The new units are bolted in line across the adjoining belt ends and their screws are cut off flush with the top surface of the bolts which lie in depressions in the beveled top plates of the fastening.

The plates present a minimum of edge height so scrapers employed on the belt will ride readily over them. The new fastening is particularly suited for conveyor belts handling sand, clay, gumbo, tacky materials, fertilizers, wet fines in connection with distributing scrapers and plows. Steel, Monel Metal or Everdur can be specified.

If you write maker identify as **IEN - 7046**

ELECTRIC CIRCUITS . . Printed on plastic base for specified uses

Source: INSULATED CIRCUITS INC.
115 Roosevelt Ave., Dept. IEN, Belleville, N. J.

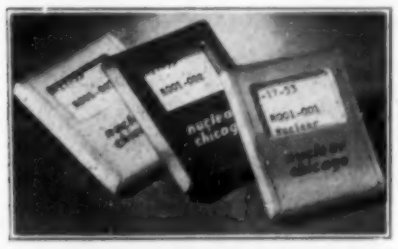


Flush switch plate

The company offers a new service to include engineering, design and production of printed circuits for specified applications. The outline shown in the illustration is a representative assembly. As many as 150 holes measuring 0.02 in. in diameter can be made and plated through in a square foot of circuit board measuring 0.125 in. in thickness. The service can be applied on large or small runs. The company is also prepared to handle complete sub-assemblies in its own plant.

If you write maker identify as **IEN - 7047**

Nuclear Instrument & Chemical Corp., 223 W. Erie St., Dept. IEN, Chicago 10, Ill., has established a service employing color-coded Nuclibadges to protect workers subject to dangerous radioactivity. The badges are worn for a week and then are replaced with new ones while the old ones are examined. A report is made on each to the company subscribing to the service.

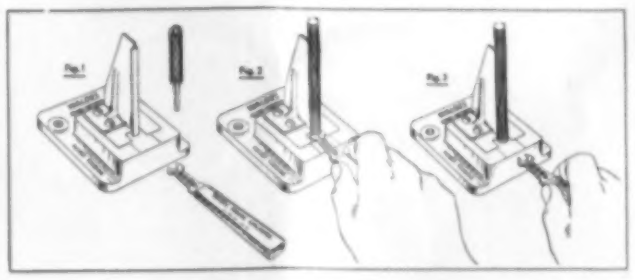


All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7049**

FASTENING . . Dispensing fixture for company's Truarc retaining rings

Source: WALDES KOHINOOR INC.
47-16 Austel Pl., Dept. IEN, Long Island City 1, N. Y.



Expedites assembly work

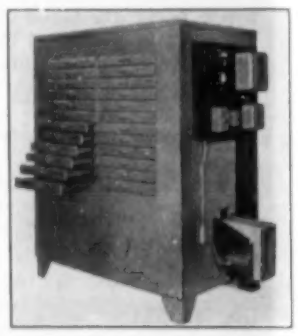
Patents are pending on a new dispenser recently developed by the company following its initial design, previously described IEN-5472-53. The dispenser applies with the patented Truarc applicator to handle E-shaped retaining rings on an assembly job. It includes a machined and weighted base that can be secured to the top of a bench or assembly table and a bracket assembly which consists of the bracket, a shim plate and a spring rail. This assembly is secured to the base by two removable round head screws.

E-rings, stacked on a rod, are delivered onto the bracket. Then they are picked off one at a time by the applicator which grasps the bottom ring of the stack flush to the surface of the underside of the tool. The same base can be used for most ring sizes. The bracket assembly is changed to conform to each ring size. The dispensing operation can be handled by unskilled labor.

If you write maker identify as **IEN - 7050**

HEATING . . Electric oven designed for product processing use

Source: GRIEVE-HENDRY COMPANY
1811 W. Lake St., Dept. IEN, Chicago 12, Ill.



100 to 850 deg. F.

Small parts can be preheated and stress relieved in this new Model HBD electric oven. Nylon powders and other materials can be processed at temperatures to 850 deg. F. The work applies in 24 drawers that measure 12 in. in width by 26 in. from front to back by 2 in. in height. Each drawer seals its opening, when it is pulled out, so work in that drawer can be unloaded and reloaded without affecting the operating temperature in the remainder of the oven. Overall dimensions are 34 by 28 by 54 inches.

Heat is supplied in Inconel-sheathed Life-time electric elements with indicating temperature control and a high and low heat switch for close regulation and quick recovery. A manual interlock provides for a purge period in which the blower operates without heat. An electric interlock turns the heat off in case the belt connected blower motor fails. Intake and exhaust are both adjustable. The exterior is finished in baked enamel and the interior in silicone aluminum paint to resist heat.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7052**

SAVE TIME • STEPS • MATERIALS with the ONE HAND HANSEN TACKER

• FASTER • BETTER • LESS COST } Tacking at

TAKE-UP JAW

QUICK OPENING SAVES TIME IMPROVES SERVICE

REG. U.S. PAT. OFF.

HANSEN

ENGINEERED FOR SERVICE

FASTER! With its zip-zip compound leverage action, Hansen saves time in all types of tacking and fastening. Fast, easy one-hand operation. Tacks fast as you grip. Leaves one hand free.

BETTER! Balanced design insures accurate, precision driving. Powerful action drives each staple firmly and neatly in place for improved quality and increased holding power. It is adaptable to a wide variety of uses — screens, insulation, TV wires, etc.

AT LESS COST! Hansen saves *time, steps and materials* — operates faster — saves back-tracking — ready for instant, continual use.

USE ONLY GENUINE HANSEN STAPLES IN THE BLUE BOX — *for faster, smoother tacking and better performance!* Staples in 80 sizes. Tackers in 36 models.

A. L. HANSEN MFG. CO. Request Booklet ...TODAY

5051 RAVENSWOOD AVE. • CHICAGO 40, ILL.

If you write maker identify as **IEN - 7053**

New... Air Drill World's Smallest

It's Really Amazing!

- 3/16" HEAVY DUTY DRILLING
- NEARLY 1/4 H.P. . . . STALLPROOF
- 1/4" LIGHT DUTY DRILLING
- WEIGHS LESS THAN 1½ LBS.
- USES 38% LESS AIR

Highest precision construction makes this drill revolutionary!

Write ARO or see your ARO distributor.

THE ARO EQUIPMENT CORP., BRYAN, OHIO

Offices in All Principal Cities
In Canada—Aro Equipment of Canada, Ltd., Toronto, Ont.

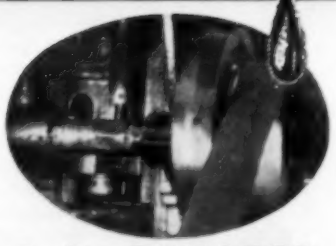
ARO

AIR TOOLS
Also . . . AIR HOISTS . . . LUBE EQUIPMENT . . . AIRCRAFT PRODUCTS . . . GREASE FITTINGS

If you write maker identify as **IEN - 7048**

OIL YOU CAN SEE . . . IS WASTE YOU CAN STOP!

Stop waste WITH



HOUGHTON E. P. TREATED

STA-PUT LUBRICANTS

. . LESS OIL . . . LESS OFTEN! Houghton Sta-Put Lubricants *stay put* where they're needed—cling tightly to metals—offer extraordinary adhesion. They give you film strength many times higher than that of ordinary lubricating oils. They keep your equipment running longer . . with greater safety . . . on less! Write for data on "Sta-Put" Oils and Greases, to E. F. Houghton & Co., 303 W. Lehigh Ave., Philadelphia 33, Pa.

STA-PUT LUBRICANTS . . . products of HOUGHTON & CO. PHILADELPHIA · CHICAGO · DETROIT · SAN FRANCISCO

Ready to give you on-the-job service . . .

If you write maker identify as **IEN - 7051**

GREATEST DEVELOPMENT IN WORK GLOVE HISTORY

The same heavy cowhide side split used in work gloves now tanned to a softness never before achieved.

It's COMFORTAN

Free TEST OFFER
We'll make a pair of COMFORTAN work gloves specifically for your job if you'll send us a description of the job and a worn-out pair of your present gloves! *Try it! Test it!*

1. Secret, new tanning process tans heavier leather to greater softness!
2. Greater heat resistance!
3. More wear in every pair!
4. Safety Green, new color in work gloves!
5. Maximum flexibility! Maximum safety!

ILLINOIS GLOVE CO. Offices Champaign, Ill.

Factories: Champaign, Pana, Effingham

If you write maker identify as **IEN - 7054**

MILLIONS OF GALLONS OF LIQUIDS ARE ACCURATELY MEASURED EACH YEAR BY THESE . . .

. . . BOWSER XACTO METERS

Wherever precision measurement is essential to assure constant uniformity of product—control costs, or simplify handling of liquids—there you will usually find Xacto meters on the job.

Right now—in many plants of all types—Bowser Xactos are efficiently handling 662 different liquids.

It will pay you to consult with your nearby Bowser representative.

BOWSER, INC.
1338 Creighton Ave., Fort Wayne 2, Ind.

BOWSER
Regional Offices • Atlanta • Chicago • Cleveland • Dallas • Kansas City • New York • San Francisco • Washington, D. C. • Hamilton, Ontario

If you write maker identify as **IEN - 7055**

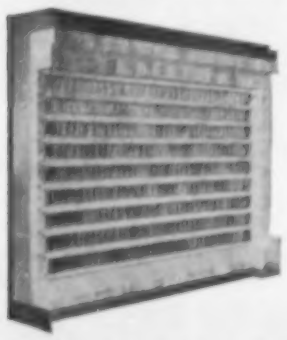
A GUARANTEED HEAT SOURCE, *Easily Installed*

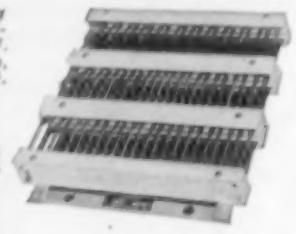
"FOLDED-and-FORMED" Heating Elements

are quickly, easily installed in furnaces, ovens, kettles, etc., to assure a heat source unequalled for quick rise to temperature; long-life efficiency; low-cost maintenance and repairs.

STANDARD RACKS

Sizes 12" x 12". Installed vertically or horizontally, side-by-side, end-to-end, or in banks, to meet K. W. requirements. Five-year guarantee, at temperatures to 750° F. or 1350° F.





CUSTOMBUILT RACKS

Available in wide range of sizes and combinations, to fit any flat or curved area, to provide maximum K. W. at temperatures to 1850° F.

Hundreds of different applications are demonstrating the outstanding efficiency and economy of "F-and-F" Heating Elements. You, too, can use them *profitably!*

TREN INC.
Electrically Heated Industrial Equipment
247 LEVERINGTON AVE. PHILA. 27 PA

If you write maker identify as **IEN - 7056**

● Reads like any standard depth micrometer. Precision made for close tolerance work. Saves time, reduces error, reduces rejects. Quickly pays for itself. Send for details.

ACME INDUSTRIAL COMPANY
215 N. Laflin St., Chicago 7, Ill.

MFRS. OF STANDARDIZED DRILL JIG AND FIXTURE BUSHINGS

If you write maker identify as **IEN - 7057**

NEW! TURBO BLAST CLEANING MACHINES

for washing, degreasing, stripping

Turbo-Blast combines violent agitation with solution detergency to quickly remove chips, cutting oils and drawing compounds from parts in production. Also cleans grease, oil, carbon and deposits from parts and assemblies being serviced. Saves up to TWO-THIRDS in cleaning time. Saves on chemicals — plant space and labor. Heated with steam, fuel oil, natural or manufactured gas with thermostat control for efficiency and economy. Performance facts available.

Sizes for all requirements from small portable units to specially designed systems of any size, conveyorized or batch types.

STORM-VULCAN, INC.
2225 BURBANK DALLAS, TEXAS

PROVED BY PERFORMANCE

Write for Catalog

Storm-Vulcan, Inc.
2225 Burbank St., Dallas, Texas
Send me Turbo-Blast Catalog.
Name_____
Company_____
Address_____
City_____ State_____

If you write maker identify as **IEN - 7058**

TESTING . . Over-potential meter, to 10,000 volts, 500 microamperes dc.

Source: ASSOCIATED RESEARCH INC.
3762 W. Belmont Ave., Dept. IEN, Chicago 18, Ill.

Bulletin 14-1

Model 421 is a new instrument in the company's line of ac. and dc. over-potential test equipment. Applications include checking dielectric strength of electrical equipment components, measuring insulation resistance to 1,000 megohms, maintenance testing heavy equipment of any capacitance.

The instrument provides continuously variable output voltage and current with direct readings for both. Its microammeter is protected against over-load. Voltage readings are accurate within 2 per cent of full scale. Current readings are within 3 per cent. Operation is on 115 volt 60 cycle ac. Overall dimensions are 18 by 9 by 11 inches. Weight is 37 pounds. Terminals include a stand-off insulator on a positive high voltage terminal and a negative ground on the housing.

If you write maker identify as **IEN - 7059**

CASTER . . Cold forged design, sealed bearing races, to 1,200 pounds

Source: RAPIDS-STANDARD COMPANY
342 Rapistan Bldg., Dept. IEN, Grand Rapids 2, Mich.

Bulletin 52-54

Neoprene is employed to seal out dirt and retain lubricant in the two swivel races and in the hub bearing of this new Series 5200 Rapistan casters. The frame parts are made by cold forged steel plate and by submerged arc weld assembly. The ¼-in. top plate is hardened. The king pin can be specified in replaceable or permanent design.

Four sizes in the line employ 4 to 8-in. wheels and measure 5¾ to 9¾ in. in overall height. The mounting plate measures 4½ by 6½ inches. Five types of wheel include Nicro-Steel, forged steel, demountable rubber, solid rubber and Durastand plastic. Oilite or Hyatt roller bearings can be specified in the wheel hub. The demountable rubber tired wheel is shown in the illustration. For each size of swivel caster, there is a mating size of rigid unit.

If you write maker identify as **IEN - 7060**

Look now to Brookville Mfg. Co., Box 67, Dept. IEN, Brookville, Pa., for new structures as well as additions to the All-Steel Fully-Insulated buildings previously manufactured by Blaw-Knox Company. The new manufacturer is prepared to handle future servicing and expansion needs. A bulletin is available on the subject.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7061**

Save Draftsmen's Time

YOUR TYPIST CAN DO THE JOB BETTER

The Vari-Typer lettering machine is the fastest and most economical method of lettering specifications on tracings and drawings. No more tedious time-consuming lettering operations requiring expensive time of skilled draftsmen.

The Vari-Typer lettering machine is four to five times faster than hand lettering and is operated by an office typist. Every letter and figure is uniformly clear and distinct. Instantly changeable type, with hundreds of different styles to choose from in sizes ranging from 6 pt. to 18 pt. Write today for information.

Vari-Typer

Lettering Machine

Body copy produced on DSJ Model. Headlines photo-composed on the Headliner.

RALPH C. COXHEAD CORP.
720 Frelinghuysen Avenue
Newark 5, N.J.

Please send Vari-Typer Book 20

NAME.....
COMPANY.....
ADDRESS.....
CITY.....ZONE...STATE....

If you write maker identify as **IEN - 7062**

MET-L-WOOD

METAL BONDED TO PLYWOOD

STRUCTURALLY: Like STEEL
WORKABILITY: Like WOOD

● A Met-L-Wood panel ⅜" thick has the same stiffness as a ¼" steel plate — yet weighs only one-third as much! Add to these facts: excellent workability without special tools, inherent sound-deadening, insulating and vibration-damping qualities . . . and smooth, clean surfaces that withstand hard wear, water, and weathering. Isn't there a place for versatile Met-L-Wood in your product planning? Details are yours for the asking in the bulletin described below.

THE ANSWER BOOK ON MET-L-WOOD FOR YOUR USES

Met-L-Wood Bulletin 521 contains 16 pages of technical data, facts and photos to give you a clear, accurate picture of Met-L-Wood characteristics, uses and possibilities. Write for your copy today.

MET-L-WOOD CORPORATION
6755 West 65th Street, Chicago 38, Illinois

If you write maker identify as **IEN - 7063**

"TEFLON" SEALING

Exclusively at Graef Engineering Company

Seal maintains all the desirable properties of "TEFLON"
Extreme chemical resistance
High temperature stability
Superior electrical properties
Non-adhesion
Allows fabrication from "TEFLON" film

POTENTIAL APPLICATIONS

"TEFLON" bonded to "TEFLON"	"TEFLON" bonded to Metal
Bags and Sacks	Valve Discs
Tank Liners	Vat Liners
Containers	Capacitors
Protective Clothing	Protective Coatings
	Heat Sealers

Write us for full details

GRAEF ENGINEERING COMPANY
P. O. Box 416
Paramount, California

If you write maker identify as **IEN - 7064**

A SOUND investment for your plant!

Keep this idea in mind when you organize for modernization — for additions — for new plants — in planning sound signal systems

CHOOSE FEDERAL!

Federal's dependable signals will assure distinctive, action-producing sound without fail when you need it. Whatever the application for calling, locating or warning, FEDERAL has a device to fit your needs. Write today for the Federal Industrial Signal Catalog.

Horns for paging systems, general code or alarm requirements.

Heavy duty Electric bells for all alarm and signal purposes.

Sirens for fire, Air raid and any other general alarm service.

FEDERAL SIGN and SIGNAL Corporation
Formerly: Federal Enterprises, Inc.
8745 S. STATE STREET CHICAGO 19, ILLINOIS

If you write maker identify as IEN - 7065

32 Pages of Helpful Information on Dust Recovery Systems

If you are now using dust or fly ash recovery equipment in your plant—or are planning installation of such equipment now or later—you will find this 32 page Multiclone booklet full of helpful information. Illustrations and diagrams outline basic principles of dust recovery and how to utilize them for maximum efficiency . . . how to simplify your installations . . . how to conserve valuable plant space . . . how to get high recovery over a wide range of particle sizes, etc. *A copy of this booklet should be in your files for reference and assistance in dust recovery applications. A free copy will gladly be sent you on request. Write today while supplies are adequate.*

WESTERN Precipitation CORPORATION

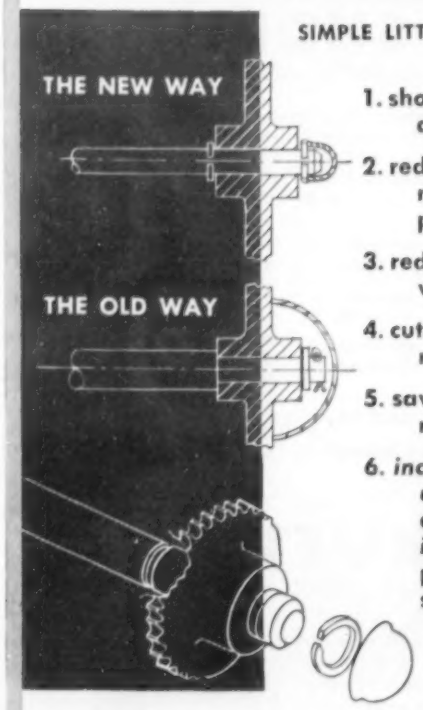
DESIGNERS AND MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS

Main Offices: 1011 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
CHRYSLER BLDG., NEW YORK 17 • 1 N. La SALLE ST. BLDG., CHICAGO 2
1429 PEACHTREE ST. N.E., ATLANTA 5 • HOBART BLDG., SAN FRANCISCO 4
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

If you write maker identify as IEN - 7066

"SAVE TIME SAVE MATERIALS SAVE MONEY"

will always be a great industrial slogan



SIMPLE LITTLE RETAINING RINGS . . .

1. shorten assembly time
2. reduce maintenance of parts
3. reduce weight
4. cut down needless space
5. save material
6. *increase ultimate profit—* and frequently improve his product at the same time.

● The world admires not only our unparalleled mass production, but our ingenious designing and *redesigning* which constantly improve and simplify *without* sacrificing strength and complete dependability.

Practically every manufacturer can improve his product—and his ultimate profit—by redesigning his machines and the construction details of his products.

The use of these inexpensive yet efficient artificial shoulders is already widespread—and is increasing constantly.

Every product—metal, wooden or plastic—should be examined carefully to see where shoulders and collars could be redesigned to use these steel rings.

Write today for descriptive booklet.

THE NATIONAL LOCK WASHER CO.
NEWARK 5, N. J. • MILWAUKEE 2, WISC., U. S. A.

If you write maker identify as IEN - 7068

SIGNALING . . Radio receiver for silent paging in plant or office

Source: DICTOGRAPH PRODUCTS INC.
95-25 149th St., Dept. IEN, Jamaica 35, N. Y.

Only you hear the call

Miracle Page is a new assembly of transistorized radio receiver and speaker which, together, weigh a little less than 4 ounces. The receiver is equipped with a long life mercury battery and fits in a user's pocket. The tiny speaker connects to the receiver with a wire and clips on the wearer's coat close to an ear. The equipment applies with any standard amplifier designed for paging.

It receives signals from an induction paging loop which otherwise are inaudible. It can be heard distinctly by its wearer in areas of high noise level. The equipment is designed for use by certain key personnel in a plant or office.

If you write maker identify as IEN - 7069

CORROSION PROOFING . . Oil compounded with non-metallic additive

Source: GULF OIL CORP.
1500 Gulf Bldg., Dept. IEN, Pittsburgh 30, Pa.

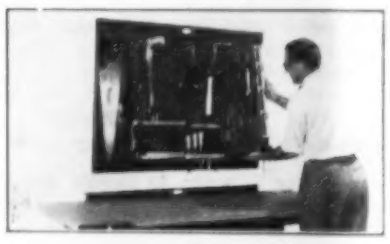
Technical data upon request

Oilcoat T is a new compound of oil and non-metallic additive to prevent corrosion on metal surfaces of equipment and machinery during shipment, storage or seasonal shutdown. The new oil is compatible with machine lubricating oils so no harmful precipitates can get into them. It will displace a water film if the metal surfaces being protected are wet. It will protect metal surfaces against corrosion under conditions of high humidity in storage. Application is by spray, dip or brush and by circulation through lubricating lines followed by draining.

If you write maker identify as IEN - 7070

STORING . . Steel tool rack assembles tools on removable panels

Source: STURDI-BILT STEEL PRODUCTS INC.
2501 W. Peterson Ave., Dept. IEN, Chicago 45, Ill.



Also for accessory parts

Slotted panels, to take hanger hooks and slotted tool holder shelves, measure 11 in. in width in this new tool rack. The panels slip into place in a frame measuring 37 in. in height. The frame, also made of steel, is secured by means of screws to a wall. Twelve hanger hooks and one slotted shelf are supplied with each panel. The rack is available in 2, 3 and 4 panel assemblies with list prices ranging from about $8 to $14.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7071

MORE WORK using FEWER WORKERS with

DUO-FAST One-Hand AUTOMATIC TACKERS

You can do much more tacking in less time with these efficient Duo-Fast Tackers . . . You'll like the wide range of AIR TACKERS, GUN TACKERS and HAMMER TACKERS available. You get exactly the model you need . . . You'll like our money-saving FREE MAINTENANCE SERVICE. For the complete story, mail this coupon.

FASTENER CORP. 860 Fletcher St., Chicago 14, Ill.

FREE TELL US MORE about Duo-Fast Tackers for — _____

Our Business is _____
Company Name _____
Address _____
City _____ State _____

If you write maker identify as IEN - 7072

Your Best Buy in Burs!

S.S.WHITE BURS cut fast, clean and cool and give long-lasting economical service. Cutting edges are keen — and stay sharp. There's a full selection of sizes and shapes of chromed, and carbide burs for cutting brass, steel, wood, hard rubber, bone or any other material that can be bored or milled by sharp-edged hardened steel tools.

WRITE TODAY for 50-page Catalog T-51

It completely describes the full line of S.S. White flexible shaft tools and other industrial products.

THE S.S.White INDUSTRIAL DIVISION
DENTAL MFG. CO. Dept. N, 10 East 40th St., NEW YORK 16, N. Y.

WESTERN DISTRICT OFFICE: Times Building, Long Beach, California

If you write maker identify as IEN - 7073

GENERAL INDUSTRIAL PNEUMATIC TIRES

WIDE-BASE design is the key to every wanted feature for more profitable material handling

SAVE TIME • MONEY • LABOR

- *MORE LOAD CAPACITY AT LOW OR HIGH SPEEDS*
- *CUSHION EQUIPMENT AND LOADS REDUCING BREAKAGE AND SPILLAGE*
- *SAVE HIGH COST FLOORS AND FLOOR SURFACES*
- *SLOW, EVEN WEAR FOR LONG SERVICE*
- *HIGH FLOTATION FOR EASIER ROLLING OVER SOFT GROUND*
- *ROLLS EASIER, SMOOTHER OVER ALL SURFACES*

Available separately or in assemblies of Tires, Tubes and Wheels. Size O. D. 8" to 27"—200 to 4000 lbs. cap. for low or high speeds.

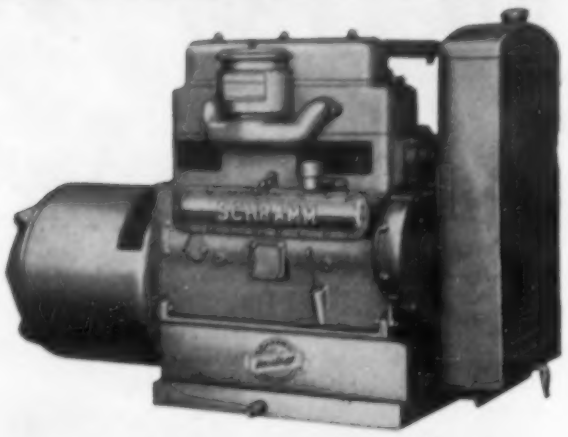
Rigid **CASTER FORKS** *Swivel*

Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

SEND FOR CATALOG . . . DEPT. 6

The GENERAL TIRE & RUBBER CO. Akron, O.

If you write maker identify as **IEN - 7075**



Direct Motor Drive Compressor With Cooling Unit

- NO ELABORATE FOUNDATIONS WHEN INSTALLING THE MODERN SCHRAMM AIR COMPRESSORS.
- VIBRATIONLESS . . . EASY TO MOVE . . . EASY TO INSTALL.
- FURNISHED COMPLETE WITH ALL NECESSARY ACCESSORIES.
- SIZES FROM ½ TO 150 HORSEPOWER, DIRECT CONNECTED, V-BELT DRIVE AND TANK MOUNTED.

Write for Catalog 5110-A

SCHRAMM INC. THE COMPRESSOR PEOPLE WEST CHESTER PENNSYLVANIA

If you write maker identify as **IEN - 7076**

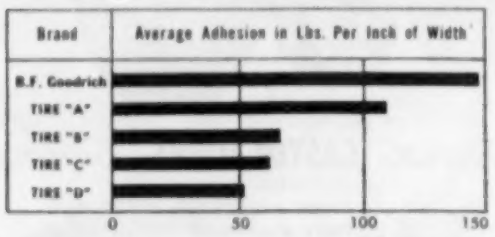
B.F. Goodrich

FREE TW TIRE AND WHEEL ANALYSIS can cut your tire maintenance costs 20% or more

TIRE maintenance costs cut 20%. Total tire costs lowered as much as 50%. Such savings have been reported by industrial tire users across the country through the use of the B. F. Goodrich Tire and Wheel Analysis Plan! Simply contact your BFG retailer or mail the coupon below. Without cost or obligation a trained B. F. Goodrich man will analyze your materials handling operations and make recommendations which will cut your tire and maintenance costs. A special TW Analysis is available for industrial equipment manufacturers.

DO YOU HAVE THIS PROBLEM? Poor adhesion of rubber to steel caused this tire to fail prematurely. The chart below, based on extensive comparison tests of leading makes of tires, proves the superior adhesion qualities of B. F. Goodrich solid industrial tires.

Tests Prove B. F. Goodrich Adhesion Best



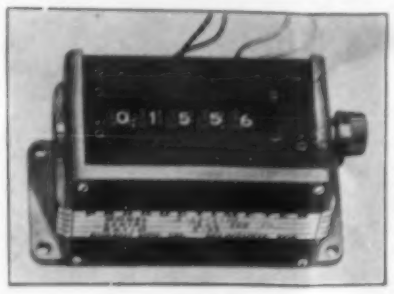
The B. F. Goodrich Company
Tire & Equipment Division
Dept. TW-305, Akron 18, Ohio
Please send me:
☐ Additional information on your Tire and Wheel Analysis Plan
☐ Free copy of "Industrial Tire Guidebook"
☐ Free copy of "How to Get Extra Service Out of Solid Industrial Tires"
Name
Company
Street
City Zone State

Specify B. F. Goodrich tires when ordering new equipment

If you write maker identify as **IEN - 7078**

COUNTING . . Five wheel unit actuates circuit at a pre-set total

Source: DURANT MFG. CO.
1930 N. Buffum St., Dept. IEN, Milwaukee 1, Wis.



Counts to 99,999

Type SP-MF is a new predetermined electrically operated counter available in 4 or 5 wheel assemblies for counting speeds to 600 units per minute. The wheels can be preset to actuate a control circuit at any count between 1 and 9,999 or 1 and 99,999, respectively. A hinged metal cover provides quick access to the predetermined wheels when the total is to be set up.

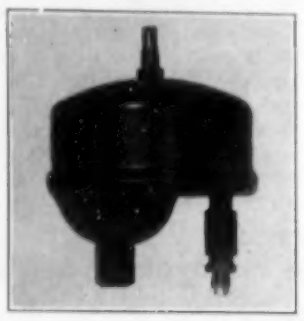
The control circuit rates 5 amp. on 110-volt or 220-volt 60-cycle ac. Coil resistance can be specified at 550 to 600 ohms. Line current is 0.06 amp. with the core seated or 0.12 amp. with the core unseated at 110-volt 60-cycle ac.

Assembly is in a housing that measures 4⅜ by 2½ by 2⅝ inches. Weight is 1¾ pounds. A feature of the construction lies in the fact that the control switch is not reset for the next run until all of the wheels are on zero position. The figures stand $\frac{3}{16}$ in. in height on the wheels. Bearings are oilless automotive type.

If you write maker identify as **IEN - 7079**

TRAP . . Float type unit removes water accumulated in air line

Source: AMERICAN INJECTOR CO.
1000 E. McNichols Road, Dept. IEN, Detroit 3, Mich.



To 200 pounds

Model F3030 is a new trap for application at the bottom of an air line filter bowl or beneath a drain line at any point in a pneumatic installation where water can separate from the air and accumulate. When 3 or 4 oz. have flowed into the trap bowl, its float rises and opens the outlet to discharge. The trap rates 20 gph. in intermittent operation.

Weight is about 1½ pounds. Dimensions are 4¼ by 5 inches. The parts are noncorrosive. The needle type valve rides in a renewable seat. A sump is provided for periodic dirt cleanout.

If you write maker identify as **IEN - 7080**

Three belt conveyors, operating in series to handle granular materials from cars to storage, are prevented from plugging up when one must be stopped, by installation of materials level indicators and controls between the conveyor ends. Shutdown in any one conveyor now stops the others automatically. Bin-Dicator Co., 13946-93 Kercheval Ave., Dept. IEN, Detroit 15, Mich., supplied the control and indicating equipment.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7081**

Bought your copy yet?

- 700 Pages
- 450 Illustrations

"One or Several Are Needed in Every Stamping Shop . . . American Machinist"

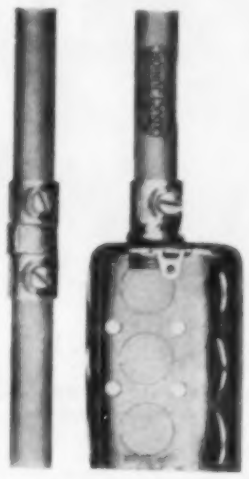
Sections on: Computing press jobs • Selecting proper press • Useful engineering tables • Die illustrations • Complete glossary • Plus a service section for Bliss presses. **$7.50**

E. W. BLISS CO.
(Handbook Department)
1418 Raff Road S. W. Canton, Ohio

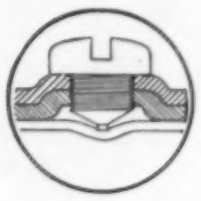
Rush me a copy of the Bliss Power Press Handbook.

I am enclosing $7.50 ..... • Bill me .....

If you write maker identify as **IEN - 7082**



VIBRATION PROOF E.M.T. FITTINGS



Performance under actual heavy-punishment conditions has proven these EMT fittings to withstand continuous vibration. By simply tightening the imbedding set screw a safe-permanent bond is assured which cannot be broken or loosened except by releasing the screw.

Write for Bulletin 581

National Electric PRODUCTS CORPORATION
140 Stanwix St., Pittsburgh 22, Pa.

If you write maker identify as **IEN - 7083**

ECONOMY LIFTERS

Sturdy Structural Steel Frame Engineered for Extra Stability and Strength

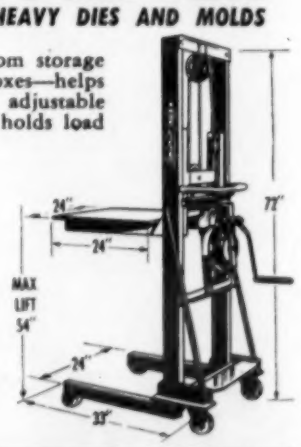
SHOPLIFTER

LIFTS-MOVES-SEPARATES HEAVY DIES AND MOLDS

Safely handles heavy dies from storage rack to press—lifts barrels, boxes—helps load trucks—or as a handy adjustable shop table. Automatic brake holds load at any height.

Type D — Hand operated. Cap. 500 lbs. **$183.60**
Type DE — Electric operated. Cap. 500 lbs. **$412.08**
Type DX — Hand operated. Cap. 1000 lbs. **$349.52**
Type DX — Hand operated. Cap. 2000 lbs. **$417.52**

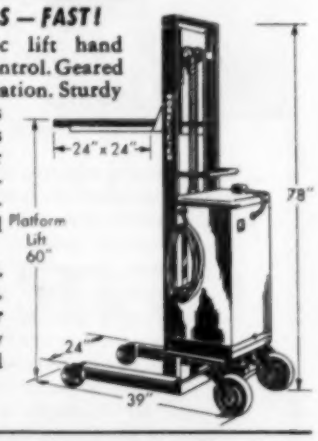
Floor lock included. Prices net, f.o.b. Chicago.



WORKLIFTER

STACKS 1000 LB. LOADS — FAST!

Battery powered, hydraulic lift hand truck. Push button remote control. Geared pump for smooth, quiet operation. Sturdy structural steel frame. 12 volts (two six volt batteries) lifts loads fast. Built-in, 8 amp/hr battery charger. Power shut-off to prevent excessive overload. Roller bearing, solid hard rubber wheels.
60" platform lift, $695.00.
80" platform lift, $795.00.
Adjustable fork models for pallets from $810.00. Many other models for special applications.



ELEVATING TABLE

ADJUSTABLE HEIGHT — 2000 LBS. CAPACITY

For feeding sheet stock, supporting fabricated frames, handling heavy dies or as a portable work bench.

Self-locking worm and screw elevating mechanism holds work at any height without danger of falling.

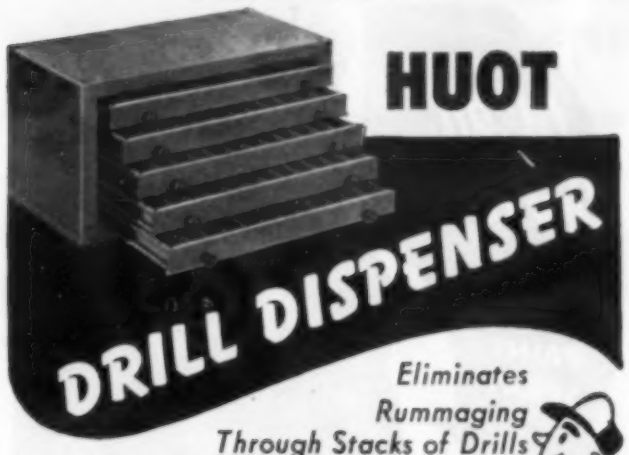
Table dimensions 24" x 36". Height adjustable between 24" minimum and 42" maximum. Foot operated floor lock holds table stationary when not in use.

Net price, $210.80 f.o.b. Chicago.

Representatives and Distributors in All Industrial Areas

ECONOMY ENGINEERING CO., 4502 W. Lake St. Chicago 24, Ill.
ESTABLISHED 1901

If you write maker identify as IEN - 7085



HUOT DRILL DISPENSER

Eliminates Rummaging Through Stacks of Drills

No more running out of drills—your entire stock can be seen at a glance. Each size of drill has its own compartment with rounded bottom for easy selection. You can store dozens of small drills and several large ones in their own compartments. Built-in pricing or inventory system eliminates the need for cost sheets, and will keep a record of drills on hand. *Specifications:* 14½" long, 7¼" high, 7¼" deep. Hammerlin baked enamel finish over rugged steel. *Write for Circular.*

Made in three models for fractional, number or letter drills

"HUOT" is pronounced "HEW-OT"

HUOT MANUFACTURING CO.

565 No. Wheelor St., St. Paul W4, Minn.

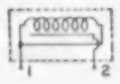
By the makers of HUOT DRILL INDEX

If you write maker identify as IEN - 7086

ENGRAVED *Vinylite* STAMPS

Super Sanitas FABRIC WALL COVERING

Are better than rubber 3 ways



ENGRAVED *Vinylite* IS ACID-PROOF

Acid etching inks, used for permanent stamping on metal and all non-porous surfaces will eat away at rubber. Vinylite resists this action . . . gives longer life by far.

ENGRAVED *Vinylite* STAMP DIES GIVE RAZOR-SHARP IMPRESSIONS EVERY TIME

Opaque inks will clog shallow rubber stamp faces rapidly. Our deep-molded engraved VINYLITE stamp faces have more than three times the depth of ordinary rubber stamps. Markings always remain super sharp . . . the clearly identifying mark that distinguishes and labels your product of quality.

ZK

ENGRAVED *Vinylite* STAMP DIES HAVE CUSHION-LIKE RESILIENCE

Our VINYLITE molding process includes a timed curing that imparts to this versatile plastic all the elasticity of rubber. Resilient VINYLITE STAMP DIES resist abrasive action, conform to irregular surfaces . . . and last much longer!

Engraved Vinylite Stamp Dies are adaptable to any automatic or hand marking device. They can be used to stamp on every surface, metal, wood, fabric, paper, plastic, etc.

+MALLORY 5-53

KRENGEL MANUFACTURING CO., INC.

Dept. B 227 Fulton Street, New York 7 N. Y. • Tel. CO 7-5714

If you write maker identify as IEN - 7087

SAVE on OPERATING COSTS and RENT with CARD *Sturdi-Lite* SAFETY LADDERS

EASY to move around, SAFE to work on, handy shelf or basket at top. Amazingly LIGHT WEIGHT but STRONG tubular ALUMINUM construction, including hand rails. Sturdy one-piece steps, non-skid rubber treads. Ball-bearing casters on two rear legs and front Swiveling Caster. Heavy coil spring keeps the two front rubber feet off floor until a person steps on ladder, then they lower and rest securely on floor.

MANY Time-Saving USES in factory assembly lines, maintenance work, stock, tool and file rooms, etc.

SAVE SPACE—stack things HIGH in files, shelves, bins, lockers, etc. They're easy to get at, with CARD SAFETY LADDERS.

For NARROW AISLES — 18" width in 3-step and 4-step, with shelf or basket at top.

For WIDE AISLES — 24" width in 5-step and 6-step, with shelf only at top.

NOTE: All safety ladders are shipped K.D., single carton, with guaranteed 10 day delivery.

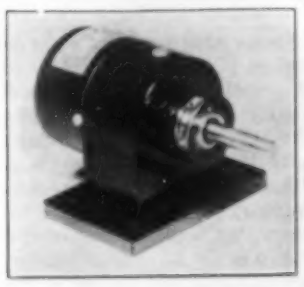
ALSO 2 and 3 step ladders and Stools, with or without casters. Write:

D. R. CARD COMPANY
828 MERCHANDISE BLDG.
MINNEAPOLIS 3, MINN.

If you write maker identify as IEN - 7088

SIGNALING . . Switch assembly shows forward and reverse rotation

Source: WINTERBURN MFG. CO.
11 Whittemore St., Dept. IEN, Putnam, Conn.



Plastic housing

Model 1025 is new design of the Dazic rotation indicating switch, previously described IEN-11329-53. It attaches to a shaft to indicate rotation in either direction by closing its electric circuit as soon as shaft speed comes up to 20 rpm. Contacts remain closed at any higher speed to the recommended maximum of 5,000 rpm. They open the circuit on decreasing speed at 12 rpm. or less. Minimum driving torque is 2 inch ounces.

The contact assemblies are mounted in a compartment at one end of the housing where they are sealed from an enclosed compartment in which two discs are mounted on ball bearings to face each other. One disc is secured to the drive shaft. The other disc floats free and carries permanent magnets. The compartment is partially filled with silicone fluid.

Rotating the drive causes its disc to rotate and transfer energy to the second disc through the silicone. This moves the permanent magnets to actuate the indicating circuit in one direction or the other upon reaching 20 rpm. as speed increases or 12 rpm. as speed decreases. Contact rating is 10 amp. on 110-volt ac. Operation can be maintained satisfactorily in an ambient temperature range between minus 20 and plus 200 deg. F.

If you write maker identify as IEN - 7089

TRUCK . . Engine driven unit takes 15 cu. ft. bucket or a platform

Source: KOEHRING COMPANY
3026 W. Concordia, Dept. IEN, Milwaukee 16, Wis.

Latch controlled dump

Load capacity is 1 ton in a 15 cu. ft. bucket or on a 34 by 54-in. platform for this new Kwik-Mix Moto-Bug truck. It represents further development of three wheel unit, previously described IEN-9671-50. It is driven by a Wisconsin air cooled gasoline engine developing about 8 hp. at 3,400 rpm. It is mounted on four 16-in. six-ply pneumatic tires. It provides a seat for the operator.

Speed is maximum at 6 mph. in forward and reverse. Direction is selected by a hand lever. Speed is governed by a hand throttle. Transmission is direct from the engine to the transmission case through shaft and universal joints. Roller chain connects the transmission to the drive axle. Brakes are internal expanding design. They are operated by a foot pedal on the operator's platform. Automotive steering is built into the rear wheels. Steering reduction ratio is 12 to 1. Turning radius is 73 inches. The truck weighs 1,100 lb. with the bucket.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7090

the switch is ON to GUARDIAN® CONTACT SWITCH ASSEMBLIES

You will soon discover these Guardian Contact Switches make no compromise with quality and performance despite their reasonable price. They are quickly available in a vast variety of contact combinations and in all popular materials from Guardian's enormous stocks of standard and special blades, lug adaptors, insulating separators and bushings ready for immediate assembly. Fine silver, silver alloy, platinum-ruthenium and Fasloy #7 contacts with blade materials of all types are available.

GUARDIAN ELECTRIC
1620-G W. WALNUT STREET CHICAGO 12, ILLINOIS

If you write maker identify as IEN - 7091

Reproduce any pattern in almost any medium on almost any surface...

by silk screen printing with the

KODAK EKTAGRAPH PROCESS

It will pay you to investigate this precise but low-cost method of printing instrument dials, electrical circuits, nameplates, charts, instructions, trade-marks, etc., on almost any surface.

The Kodak Ektagraph Process provides an easy way to make silk screen stencils that print with *photographic* accuracy. The process is fast, inexpensive, simple. No darkroom is required.

For complete information write to:

GRAPHIC ARTS DIVISION
EASTMAN KODAK COMPANY
Rochester 4, N. Y.

Kodak

If you write maker identify as IEN - 7092

new T&B ENGINEERED cable cutter

CUTS ARMORED CABLE!

Replace old-fashioned hack saw methods of cutting armored cable with T & B's new Cable Cutter, Cat. No. 364. It cuts faster, cleaner, and with considerably less effort. Specially designed cutting edges slice cleanly, leaving no jagged edges . . . no cable deformation. Forged, hardened steel blades overlap ⅛-inch to permit repeated resharpening. Cuts cable sizes up to 4/0; insulation sizes up to 1 inch. For further information, contact your T & B Distributor or write direct.

. . . AS WELL AS

armored lead cable
nonmetallic sheathed cable
service entrance cable
lead-covered cable
super service cords
trench lay cable
flexible conduit
rope (hemp)
hose

Catalog No. 364

THE THOMAS & BETTS CO.
Incorporated
60A Butler Street, Elizabeth 1, New Jersey
Thomas & Betts Ltd., Montreal, P.Q., Canada
MANUFACTURERS OF FINE ELECTRICAL FITTINGS SINCE 1898

T419

If you write maker identify as IEN - 7093

NOT THIS...

Now . . . for a good shower

—deep freeze!

—scalding hot!

BANISH "BOOBY TRAP" SHOWERS

Use POWERS THERMOSTATIC Water Mixers

BUT THIS

Real comfort and safety. No waste of time or hot and cold water.

POWERS THERMOSTATIC WATER MIXERS

—eliminate shower accidents

They are completely automatic, hold shower temperature wherever you want it regardless of **pressure** or **temperature** changes in water supply lines. Failure of cold water instantly shuts off the shower.

Tests prove Powers is safest shower regulator made for factories, schools, hospitals, hotels and clubs. Thousands now in use.

Used for Many Industrial Processes. Users report control within ½° F. Temperature Ranges: 65-115° F., 60-125° F., 75-175° F. Write for Bulletin 365. (b13)

THE POWERS REGULATOR CO.
Skokie, Ill. • Offices in Over 50 Cities • Est. 1891

If you write maker identify as IEN - 7094

If you think you can't afford a paint circulating system, Here's News

● Ever say, "We can't justify an expensive, highly engineered paint spray system?" If so, you should see the new low-cost Paintmaster circulating systems perfected by Graco.

These Graco Paintmasters are air-operated, pumping paint directly from 5 or 55 gallon original containers. No messy, costly transferring . . . and *drums do not carry pressure.* Paintmasters can supply up to 8 spray guns each, in booths hundreds of feet from your supply room. First cost is unusually low, and it's an easy system to maintain.

In the sample system shown below, one Paintmaster supplies the system while one prepares the next drum for simple, instantaneous changeover.

Write for new Paintmaster Circulating System Literature.

GRACO
Paintmaster
GRAY COMPANY, INC.
Engineers & Manufacturers
61 Graco Square
MINNEAPOLIS 13, MINN.
Regional Offices:
New York, Philadelphia, Detroit, Chicago, Atlanta, San Francisco

If you write maker identify as IEN - 7095

O-M FIELD ENGINEERS help you get the most from air or hydraulic cylinder applications...

The technical training, experience, and resourcefulness of O-M Field Engineers is available to any manufacturer who has an Air or Hydraulic application problem.

In many cases, the recommendations of these specialists result in improved design, more efficient machine performance and economies in production.

The O-M Field Engineer in your area would welcome an opportunity to discuss your Air and Hydraulic applications with you on an engineering level, in your plant. Simply contact any of the O-M Representatives listed in this advertisement or mail the coupon below. No obligation, of course.

SALES REPRESENTATIVES

J. NEILL ARMSTRONG — *Westmont, New Jersey*
BECKETT-HARCUM CO. — *Wilmington, Ohio*
GILMORE SALES COMPANY — *Detroit, Michigan*
NEIL GROOM — *Toronto, Ont., Canada*
HACKETT BROS., INC. — *No. Manchester, Indiana*
H. C. HALBERT — *Atlanta, Georgia*
H. U. ROGNESS INC. — *Minneapolis, Minnesota*
IND. SALES & ENGR. CO. — *Houston, Texas*
IND. SALES & ENGR. CO. — *Tulsa, Oklahoma*
KNOX, INC. — *East Walpole, Mass.*
H. D. MACRAE — *Rochester, New York*
JAMES E. McSHANE — *Phoenix, Arizona*
THE MERCER COMPANY — *Milwaukee, Wisconsin*
WALTER NORRIS ENGR. CO. — *Chicago, Illinois*
PNEUMATIC ENGR. CO. — *West Hartford, Conn.*
P. W. RICE — *Cleveland, Ohio*
THE RODEN COMPANY — *Cranford, New Jersey*
THE RUCKER COMPANY — *Oakland, California*
THE RUCKER COMPANY — *Seattle, Washington*
THE RUCKER COMPANY — *South Gate, California*
T. H. SCAFFE — *St. Louis, Missouri*
SINTES SALES ENGR. — *New Orleans, Louisiana*
ROBT. TAYLOR & SON — *Salt Lake City, Utah*

and O-M CYLINDERS fit where others won't!

O-M CYLINDERS available in full range of sizes (1½ to 8" bores) with standard, 2 to 1 or oversize rods. Completely interchangeable parts. Write for FREE catalog.

MAIL COUPON TODAY!

ORTMAN-MILLER MACHINE COMPANY
1208 150th Street, Hammond, Indiana

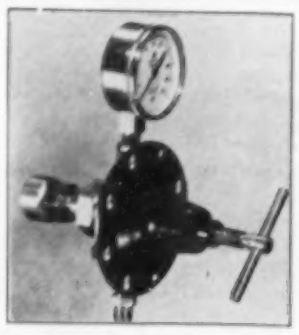
☐ Have representative call
☐ Please send latest O-M Catalog ☐ Complete Templates

Name _____ Position _____
Company _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 7097

VALVE . . Pressure regulator to control cutting and welding gases

Source: AIR REDUCTION SALES CO.
60 E. 42nd St., Dept. IEN, New York 17, N. Y.



Catalog ADC 705

Series 8900 designates a new line of pressure regulators to supersede the company's previously developed Series 8600. The line includes single-stage units for oxygen, acetylene, nitrogen, hydrogen, propane. Application is in pipe line installations where the pressure source is 150 lb. or less. None of the units in the series is designed to apply on cylinders.

The regulator maintains steady gas pressure independent of line fluctuation. The seating design eliminates need for a nozzle. Working pressure is to 140 and 150 lb. for the oxygen units, to 13 lb. for acetylene, 40 lb. for hydrogen, propane, natural gas or nitrogen and to 15 lb. for compressed air.

If you write maker identify as IEN - 7098

TRUCK . . Electric hydraulic lift to pick up and dump hogshead barrels

Source: MOTO-TRUC COMPANY
1987 E. 59th St., Dept. IEN, Cleveland 3, Ohio

Controlled at handle

The operator of this new truck walks beside it and controls its travel movements at the steering handle. He operates a mechanical clamp to grip a barrel and employs power to rotate it between dumping and upright position. Travel speed is 2½ to 3 mph. with two speeds both forward and backward.

Power is supplied by a 12-volt battery. A "dead-man" brake applies on the drive wheel. The truck measures 44 in. in width by 75 in. in length in the assembly illustrated.

If you write maker identify as IEN - 7099

Zinc chromate primer is now available in small pressurized spray containers for touch-up work. Inside are several steel balls that help mix the pigment and vehicle when the user shakes the container. The spray head can be cleaned by dipping it in solvent. Two colors are green and yellow. Western Lithograph Co., 600 E. 2nd St., Dept. IEN, Los Angeles 54, Calif., is the supplier of the new material.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7100

Left— Style 14500 R Suspended Head Bag Closing Machine. Hang it up any place!

NOW! EFFICIENT BAG CLOSING FOR SMALL PLANTS

HERE is the popular, economical Union Special Suspended Head Bag Closing Machine that offers many plants an excellent solution for handling varying volumes of work. Check these features: Easily installed anywhere in your plant with overhead pulley and counterweight or top balancer! Built-in motor, thumb-controlled clutch, and automatic brake! Plug it in and go to work! Adaptable to fabric or paper bags of various sizes!

SEND FOR THIS NEW BULLETIN!

Get your copy of this 16 page illustrated bulletin containing helpful data and charts on the complete Union Special line of bag closing machines. UNION SPECIAL MACHINE COMPANY 410 N. Franklin St., Chicago 10, Ill.

UNION SPECIAL

If you write maker identify as IEN - 7101

● The Stuard AUTOMATIC AIR SEPARATOR removes all moisture, oil and foreign matter from air lines. Does not waste air by continuous venting. Patented one-piece separator and eliminator chamber. Write for bulletin.

R & IE STUARD AUTOMATIC
AIR SEPARATOR
R & IE EQUIPMENT DIVISION
I-T-E CIRCUIT BREAKER, GREENSBURG, PENNA.

If you write maker identify as IEN - 7102

Immediate Delivery

Buy Direct from the Manufacturer and Save

Francis EST. 1880. **FACTORY-MILL & WAREHOUSE TRUCKS**

Cutting Handling Costs since 1880

WRITE TODAY for catalog and prices

3000-lb capacity

Complete Line — For every use. Standard sizes 27" x 48" and 30" x 54" in stock ready for immediate shipment.

Need more good trucks quick? Buy direct from the manufacturer and save —time AND money. Francis heavy duty, economical trucks feature strong iron work —hardwood frame—rigid construction. All carefully machine fitted. Steel rims or rubber tires.

Manufactured by
HOOSIER FENCE CO. Inc.
Dept. IEN 1701 E. 38th St., Indianapolis, Ind.

If you write maker identify as IEN - 7103

INCREASE EFFICIENCY WHILE REDUCING FATIGUE*

WITH DURABLE SPONGE RUBBER STANDING MATS

*Fatigue robs you and your business! Long hours of standing, dampness and vibration take their daily toll of efficient help!

Production line workers, machine operators, store clerks, EVERYONE works better when using Durable Standing Mats. They're safe—the beveled edges prevent tripping, the corrugated top is non-slip! Factories, institutions and stores all over the nation have PROVEN the effectiveness of DURABLE SPONGE RUBBER STANDING MATS.

Available in all sizes up to 35 x 4-feet

Write for free sample and current price list

Durable RUBBER PRODUCTS CO.
549 WEST FULTON STREET
CHICAGO 6, ILLINOIS

If you write maker identify as **IEN - 7104**

DOES YOUR PRODUCT REQUIRE V-BELT PULLEYS?

Why pay die or tool costs to manufacture your own when Nagel-Chase can supply them at low cost. These Nagel-Chase V-Belt Pulleys are of pressed steel welded construction with solid steel hubs—light weight, strong, precision-built and ideal for all light duty, fractional horse power drives. They are available in a wide range of sizes from 2 5/16" O.D. to 14" O.D. Write today for complete information—we will be glad to consult with you on your requirements.

NAGEL CHASE MFG. COMPANY
2811 N. Ashland Avenue, Chicago 13, Illinois
MANUFACTURERS OF PRECISION-BUILT CASTERS AND PULLEYS FOR OVER A QUARTER CENTURY.

If you write maker identify as **IEN - 7105**

Look To The Leader For Lubricating Devices

GITS

40 Years' Leadership

Yes, for 40 years GITS has been setting the standard for industry... solving tough lubricating problems...earning the confidence of manufacturers . . . it's the reason people say, "Call GITS first".

Low Cost

Yes, GITS oil cups can do a complete lubricating job for you . . . prolonging bearing life, reducing maintenance costs, cutting down-time, boosting production . . . and GITS oil cups cost so little.

World's Largest Selection

Yes, only GITS can offer you such a wide range of standard stock sizes. From *just one* source you can get *all* lubrication devices in *any design* for *any purpose.*

Consistent Top Quality

Yes, GITS is known for uniform quality in design, materials and machining . . . this means constant, dependable performance for you. Inferior products can cost you time and money. Demand the best . . . get GITS.

Write Today
for **FREE CATALOG** *No. 60 A*
Use it as your
handy reference for lubricating devices

Oil Hole Covers, Oil Cups, Grease Cups, Bottle Oilers, Gauges, Gravity-Feed, Wick-Feed, Constant Level, Vibrating Rod Styles. Threaded or Drive-Type, Elbow or Straight.

GITS BROS. MFG. CO.
1854 S. Kilbourn Ave. Chicago 23, Ill.

If you write maker identify as **IEN - 7107**

DRIVE . . Variable speed control to operate dc. motor from ac. line

Source: FRANKLIN CONTROL CORP.
1975 S. Allis St., Dept. IEN, Milwaukee 7, Wis.

No delicate parts

Magnetic amplifying equipment and selenium rectifiers are employed with "start" and "stop" push buttons and a speed adjusting rheostat in the new Franklin Drive. The control operates a standard shunt or compound dc. motor having a base speed of 1,750 rpm. and a voltage equal to the ac. input voltage. A drip proof ball bearing motor is supplied as standard.

The drive includes equipment for ¼ to 5-hp. ratings on 110 and 220-volt single-phase and 220-volt three-phase input. It is designed so the motor speed is proportional to the amount of rotation of the control shaft.

The shaft can be turned manually or automatically, as by a dancer roll. Turning torque of 0.5 to 2 in. lb. is required depending on the size of the control. A special drive can be supplied where speed must be proportional to an electrical signal.

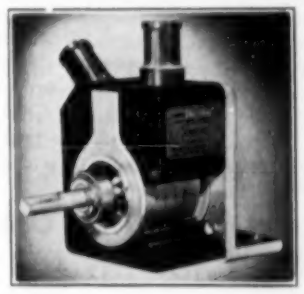
The main panel is designed to mount on a wall. The equipment on the panel is protected by a ventilated steel cover. The wiring is color coded and numbered at each terminal. Panel dimensions are 10 by 10 by 20 in. for the ¼-hp. drive and 20 by 20 by 40 in. for the 5-hp. three-phase assembly.

The station on which the push buttons and the speed control knob are mounted measures 6 by 5¾ by 10¾ in. to 9 by 9 by 18 inches. The speed control knob is calibrated in per cent of maximum speed.

If you write maker identify as **IEN - 7108**

PUMP . . Eccentric rotary design to handle acids, alkalis, oils, salts

Source: VANTON PUMP & EQUIPMENT CORP.
7308 Empire State Bldg., Dept. IEN, New York 1, N.Y.



Series V

Polyvinyl chloride is now available in the pump block construction of the company's Flex-I-Liner pump, previously described IEN-13575-53. The pump can be specified with body block materials including Bakelite, polyethylene, lucite, Buna N hard rubber and stainless steel. The Flex-I-Liner that operates inside the body is made in gum rubber, neoprene, Buna N, Hycar, silicone and Compar. Capacity ranges from ⅓ to 20 gpm. with pressure to 60 lb. and vacuum to 26 in. of mercury.

The liner and its integral axial flange ride in a slot between the inlet and outlet. Rotation of the driving eccentric that mounts inside the liner produces a rolling action between the eccentric and the block bore to draw fluid in at the outlet and carry it around the bore for delivery at the outlet. The polyvinylchloride is chemically inert, tasteless and odorless. It has structural strength, is light in weight and tough.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7109**

Drill More Holes Per Hour In ANY Pattern... On ANY Drill Press

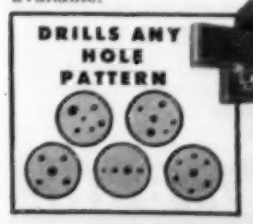
with a *Adjustable* **MULTI-DRILL**

DRILLS 2 to 8 HOLES at ONE STROKE

Increase production up to 800% ...save time, cut costs. MULTI-DRILLS make *any* drill press produce *more.* Attached without alterations or special tools. Quick, easy setups of universally adjustable spindles give you more flexibility . . wider application. Handles any hole pattern within 9" circle; centers close as ½". Extension Spindles available to increase working area to 22½". Special adaptations available.

model **900**

DRILLS ANY HOLE PATTERN



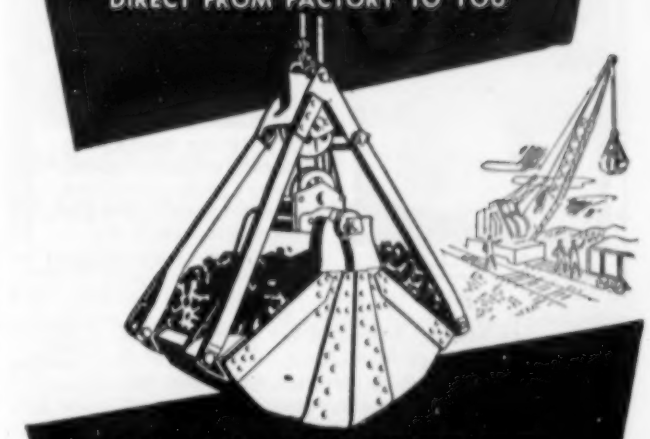
See your Commander Distributor for complete details. Write for the NEW Commander Full Line Catalog No. 954.

COMMANDER MFG. CO.
4219 W. Kinzie St. • Chicago 24, Illinois
Product of *Commander*... Better Production Tools

If you write maker identify as **IEN - 7110**

BROWNHOIST BUILDS BETTER BUCKETS —for less money

DIRECT FROM FACTORY TO YOU



ROPE-REEVE, POWER WHEEL AND LINK TYPE

Write for illustrated catalogue

INDUSTRIAL BROWNHOIST CORPORATION
BAY CITY, MICHIGAN

146

If you write maker identify as **IEN - 7111**

WILLSON HEAVY DUTY CUP GOGGLES

FOR DEPENDABLE, COMFORTABLE, PRACTICAL EYE PROTECTION

Kover-Mor* Goggles—Large size, small weight, great comfort symbolize these *molded nylon cup* goggles. They provide ample room for comfortable wear over modern, heavy-frame prescription glasses. Rigid metal top bar insures easy handling. Adjustable head-band and screened leather bridge assure fit and comfort. Style CC70 with four screened ports and Super-Tough® lenses for chippers. Style CW70 with indirect ports, Willson-Weld® filter lens and Spatter-proof® cover glass for welders.

TAW50—Strong, light weight, molded eye cups are scientifically designed to fit all faces. Large, perforated ventilation screens and ventilated metallic lens retaining rings add to comfort and clear vision. Both head-band and plastic covered chain bridge are adjustable. Super-Tough® 50 m.m. lenses resist heavy impact.

CC60—These Cover-All® cup goggles can be worn comfortably over normal size prescription glasses. Large perforated ventilation ports and ventilated external, metallic lens retaining rings reduce fogging to a minimum. Two-piece head-band and leather-curtained nose bridge are adjustable for wearer comfort.

*Trademark

See your Willson distributor today for complete information, prices and immediate delivery of Willson Spectacles, Cup Goggles and Respiratory Protective Equipment.

WILLSON

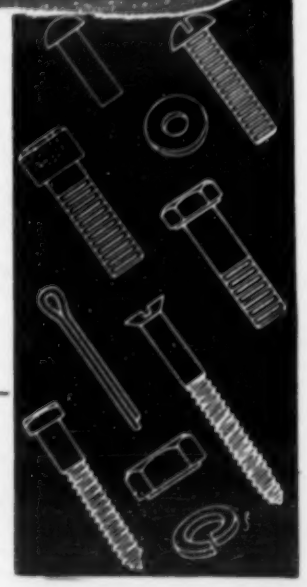
WILLSON PRODUCTS, INC., 217 Washington Street, Reading, Penna.

If you write maker identify as **IEN - 7112**

STOP CORROSION with HARPER

EVERLASTING FASTENINGS
BY THE DOZENS OR BY THE MILLIONS

If you use fastenings of brass, bronze, copper, monel, aluminum or any stainless steel, you can get what you want from Harper. Over 7,000 items stocked—all backed by Harper's advanced metallurgists and skilled engineers. See your Harper Distributor.



HARPER

EVERLASTING FASTENINGS

The H. M. Harper Company
8211 Lehigh Avenue
Morton Grove, Illinois
Please send me Harper Catalog.

Name.....
Address.....
City.....*State*.....

If you write maker identify as IEN - 7113

Have you a similar fastening problem?

File: Simmons LINK-LOCK

When the armed forces needed a positive, high-strength fastening device for instrument housings, transit cases, and storage boxes, Simmons developed LINK-LOCK. This brand-new device works with fingertip pressure, furnishes up to 450-lb. pull-down pressure. Open or closed, it always lies perfectly flat.

LINK-LOCK may be the answer to your fastening problem. If your design involves heavy fastening pressures, watertight sealing, high strength, resistance to impact, write for LINK-LOCK DATA SHEET.

Simmons Fastener Corporation, 1758 No. Broadway, Albany 1, New York

Simmons — LINK-LOCK, QUICK-LOCK, SPRING-LOCK, AUTO-LOCK — FASTENERS WITH USES UNLIMITED

If you write maker identify as IEN - 7114

DOLCOWAX
FOR BEAUTIFUL FLOORS
***Plus* IMPROVED SLIP-RESISTANCE**

DOLCOWAX gives *any* type of flooring a soft, lovely finish, pleasing to the eye and safe to the tread. Its lustre lasts for many weeks—*actually improves with traffic.* Made of the finest-quality premium wax, with "built-in" safety factor which has gained its approval by Underwriters Laboratories as a slip-resistant wax.

Easy to apply; dries to a hard, durable film of long-lasting beauty—*with anti-slip protection!*

Write for literature on floor finishes; your DOLGE SERVICE MAN will be glad to advise you on your specific floor-finish problems.

FOR FREE SANITARY SURVEY of your premises consult your DOLGE SERVICE MAN

operadable DOLGE
WESTPORT, CONNECTICUT

If you write maker identify as IEN - 7115

Gaco has the *two* correct approaches to your corrosion problems

N-700*
Maintenance Coating
Protects against ALL FUMES

Gaco **N-200-1**
Heavy duty Liquid Lining
means peak IMMERSION SERVICE

Gaco authorized Neoprene Application Shops. For your *additional* service completely equipped shops and trained personnel are located in every large industrial center to apply GACO Neoprene to your tanks and other equipment.

Nothing else protects like GACO Neoprene —real rubber in a can.

*Patent applied for.

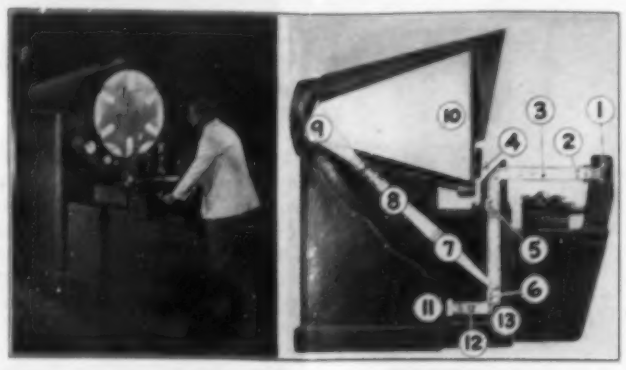
Send me all the facts about genuine Neoprene Corrosion Protection.
Name _____
Company _____
Address _____

GATES ENGINEERING COMPANY
100 E. West St. • Wilmington, Delaware
The pioneer maker of Neoprene protective coatings and linings.

If you write maker identify as IEN - 7116

GAGE . . Optical comparator projects both profile and work images

Source: EASTMAN KODAK CO.
343 State St., Dept. IEN, Rochester 4, N. Y.



Detail specifications on request

A viewing screen, measuring 30 in. in diameter, a staging area with a 17-in. throat, and provision for both shadow or profile and surface illumination are combined in this new large Model-30 assembly of the company's Contour Projector, previously described IEN-3194-50. The new equipment is suited for precision micrometry, for use on the production line for quick inspection of complete parts and to assist in inspecting portions of very large parts.

Six interchangeable lenses, with magnification between 10X and 100X, are mounted in a motorized turret. The lenses can be changed without requiring further focusing or adjustment. Projection lenses and mirrors are mounted on a single member for rigidity and alignment. The work table is provided with 8 in. of both horizontal and vertical travel and with a built-in helix table for rotation to 15 deg. from center in either direction.

Horizontal and vertical micrometers are accurate within 0.00005 in. over their 1-in. range. A screen, for angular measurements, can be read direct without need for a vernier with the aid of its precision engraved dial. This dial is calibrated to 2 min. of arc.

The light source, for shadow projection, starts at a 500-watt lamp at position 1. The light is directed through the collimators 2 over the work 3. It is reflected downward by the front mirror 4 through the relay lens element 5 to be again reflected by the mirror 6 so it passes through the relay lens element 7 and the projection lens 8 to the main mirror 9. This mirror reflects to the viewing screen 10.

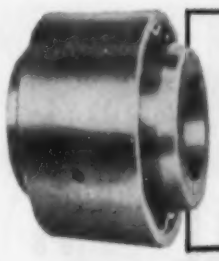
Light path, for surface projection, starts with the 1,500-watt source at 11 to pass through the collimator 12 for reflection by the mirror 13 through the relay lens 5 to the front mirror 4 which directs it to the work 3. From here the light returns, as described for shadow projection, to picture the work on the screen.

If you write maker identify as IEN - 7117

Threadwell Tap & Die Co., 16 Arch St., Dept. IEN, Greenfield, Mass., is packaging its line of taps, No. 0 to ½ in., in plastic boxes. Three box sizes are employed. Partitions hold each tap by itself. Nesting ribs are provided for stacking. Each box is enclosed in a cardboard sleeve. A lock holds the sliding cover closed in transit. The illustration shows typical appearance with the cover closed.

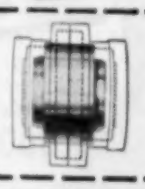
All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7118



This gear coupling SLASHES COSTS because it's the...

STRONGEST
One-piece sleeve transmits the load. No flanges, bolts . . . more tooth contact. Carries bigger loads at higher speeds . . . has longer service life.



SMALLEST
⅜ usual size, ½ usual weight. Lower moment of inertia. Allows more compact designs . . . increases life of shafts, bearings, armatures.

SIMPLEST
Only 7 parts. Assembled, uncoupled in *seconds.* Reduces assembly time . . . speeds-up alignment checks . . . eliminates corrosion problems.

Standard sizes ⅜ to 6, HP 4 to 600 per 100 RPM. Specials. Distributors in principal cities. Send for CATALOG. Sier-Bath Gear & Pump Co., Inc., 9246 Hudson Blvd., North Bergen, New Jersey.

Also Mfrs. of Precision Gears & Rotary Pumps

Founded 1905 Member A.G.M.A.

Sier-Bath *Flexible* **GEAR COUPLINGS**

If you write maker identify as IEN - 7119

ANGLE STEEL STOOLS

for
- CAFETERIA
- SHOP
- CLASSROOM

and many other uses

Angle Steel offer a diversified line of stools developed over a period of almost 50 years devoted to the producing of posture perfect seating.

No. 21 - E - 24

No. 24 - E - 28

Numerous models are available to fit any seating need. Wide range of styles, heights, seats and back rests can be had on both stationary and revolving stools. Seats are offered in wood, round or saddle styles and round steel. The adjustable back rests can be had either of wood or steel.

For additional information write for CATALOG No. 300—Sept. 1953

ANGLE STEEL, Inc.
Plainwell, Mich.

If you write maker identify as IEN - 7120

Brand new! Bambino for small prints—

The small new Ozalid® machine will turn out a letter-size print in less than a minute, for less than two cents.

The Bambino can supply detail prints . . . also copies of specs, lists, records, handwritten memos—saves time and work, frees your print room from small jobs.

LITTLE larger than a typewriter, the Bambino is a real Ozalid. It copies anything that is drawn, typed, printed or written on translucent paper, fabric, film, up to 9 inches wide, any length. Delivers clear, dry copies on coated Ozalid paper, cloth or film.

The Bambino is electrically operated, can be used by anybody. Economically priced at $410, it soon pays for itself.

Call the nearest Ozalid distributor (*see your phone book*) for a demonstration. Or write for free brochure to 122 Ozaway, Johnson City, New York.

OZALID—A Division of General Aniline & Film Corporation... *From Research to Reality.* In Canada, Hughes Owens Company, Ltd., Montreal.

OZALID BAMBINO—*smallest, fastest, low-priced white print machine that makes up to 200 copies an hour—for less than two cents a copy.*

OZALID

If you write maker identify as **IEN - 7122**

PHOTO BOOKLET shows how they solved 39 PRODUCTION PROBLEMS . . .

using standard low cost MEAD UNITS to form AUTOMATIC or SEMI-AUTOMATIC MACHINES

HOW TO: (1) De-burr small parts fast (2) Press 3 components together (3) Tap die cast knobs (4) Insert rubber discs into metal cups for insecticide "bombs" (5) Swage hubs to hypodermic needles (6) Ream center hole in valve plate (7) Broach 2 internal slots in brass valve inserts, handling 4 sizes (8) Press filters into copper shells and indent dimple in shell (9) Tap 2 holes 6/32 in brass brush holders. (10) Drill and tap a ¼-20 hole 9.16 deep then ream "bell-mouth" in stainless steel forging (11) Drill and ream a hole to controlled depth in brass valve body. (12) Drill No. 52 hole thru end of solid graphite pencil. (13) Crimp eyelet and ring on pen barrel (14) Drill and tap 2 holes 8-32 in aluminum BX connectors (15) Drill 3/16 hole in aluminum part, chamfer both top and bottom of hole, approx. 2,000 per hour (16) Cap cathode tubes for TV sets at 3,200 per hour (17) Fill pen tubes with ink, insert ball point assembly at one pass (18) Bend precut copper tubes 90° at 4,000 per hour (19) Drill 2 holes in brass castings, fed to 2-spindle drill head (20) Hold plastic bead, drill hole, eject (21) Drill bushing for 2 size clevis pins. All these plus 18 more examples of "how to do it" better, faster, cheaper—in our "39" Booklet!

Send for Free Photo Booklet "No. 39" today to:

MEAD SPECIALTIES COMPANY

4114 No. Knox Ave., Dept. E-64-A, Chicago 41, Illinois

If you write maker identify as **IEN - 7123**

DIELECTRIC STRENGTH TESTING INSTRUMENTS

. . . from a handful
. . . to a shop full!

You name it . . . ARI either has it, or can build it for you promptly from sound design and long experience with virtually every known type of high potential dielectric strength testing instrument.

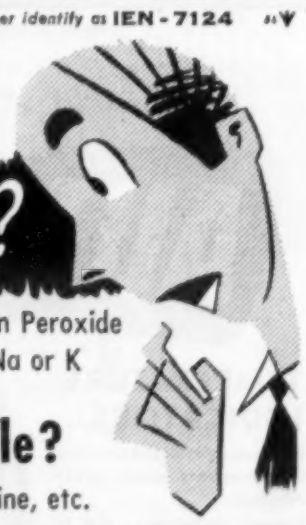
Standard "Hypot" Juniors range from 0-1500 volts to 0-6000 volts. Large mobile Hypots available to 50,000 volts, 5 KVA. **Write for data today!**

ASSOCIATED RESEARCH, Incorporated
Precision Instruments Since 1926

3782 WEST BELMONT AVENUE • CHICAGO 18, ILLINOIS

If you write maker identify as **IEN - 7124**

IS YOUR FILTER PROBLEM baffling?



H_2SO_4 Hydrogen Peroxide
Fuming HNO_3 Molten Na or K
Caustic Cl_2

OR IS IT manageable?

Water Air Gasoline, etc.

MMC offers permanent filter media engineered for optimum efficiency in handling countless exposure conditions, some of which are mentioned above.

For further information request Bulletin

Another filtration engineering service of

MICRO METALLIC CORPORATION

66-C SEA CLIFF AVE. GLEN COVE, N. Y.

PALL

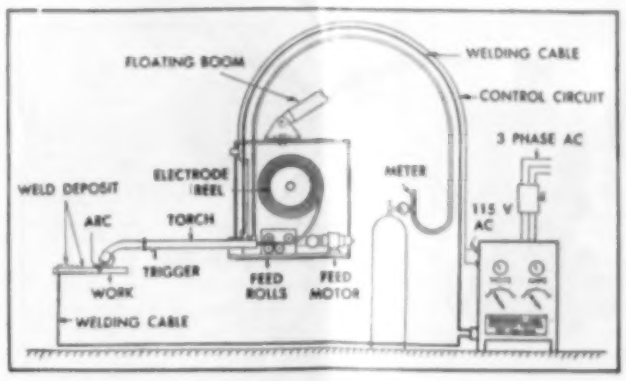
The Pall Filtration Companies

Micro Metallic Corporation | Porous Plastic Filter Co. | Aircraft Porous Media, Inc.

If you write maker identify as **IEN - 7125**

WELDING . . Arc equipment, slag, gas shielded, for common steel

Source: BERNARD WELDING EQUIPMENT CO.
10232 South Ave. N, Dept. IEN, Chicago 17, Ill.



Patents pending

"Bernard-Arc" trade names a new "slag-gas shielded" welding process to arc weld common steel. Deposit rate ranges from 10 to 40 lb. of electrode per hour. Approximately 3 lb. of base metal are fused and converted into weld metal for each pound of electrode deposited so the operation actually results in 40 to 160 lb. of weld metal produced per hour. Steel to 1 in. in thickness can be welded in a single pass. The company is prepared to supply automatic or semi-automatic equipment and the tubular flux filled electrode.

Equipment for semi-automatic operation starts with the company's constant voltage dc. welder that operates from a three-phase ac. power line, the welding head and torch with a 50-lb. electrode reel and electrode feed motor, and a free floating universal support boom that takes the weight of head and torch.

Control centers at a trigger on the torch and at a jog button on the head housing. The operator is required only to manipulate the horizontal movement in the semi-automatic equipment.

The electrode is melted by the heat of the arc and the metal is transferred through the arc to become part of the weld metal. At the same time, the flux core melts and is transferred through the arc to become the refining and shielding blanket of slag. Both the metallic part of the electrode and the flux transfer through the arc in a finely divided ionized state.

Oxidation of the ionized electrode materials is prevented by flowing a separate gas, not a product of the flux, downward over the arc column. The separate gas can be carbon dioxide or one of the inert gases such as argon or helium. In that the arc is not submerged under the slag the welding operation can be observed. The company has prepared a bulletin, "Bernard Arc" Slag-Gas Shielded Arc Welding, available on request.

If you write maker identify as **IEN - 7126**

MOWING . . Engine driven machine floats sickle bar to follow the ground

Source: JARI PRODUCTS INC.
2938 Pillsbury Ave., Dept. IEN, Minneapolis 8, Minn.

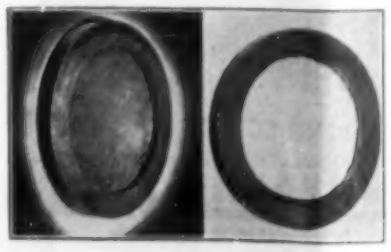
Teeth are guarded

Jari Champion is a new assembly of the company's engine driven mowing machine. It is available with a 36 or a 44-in. sickle bar and is powered by a 2½-hp. engine. The design is characterized by "floating" action of the sickle bar to follow changing ground contours and to return to level position when it is raised to clear obstructions. The machine operates on slopes as well as on even ground. It will cut brush, tall grass, weeds, sumac. Sprayers and snow plow attachments as well as lawn mowers are available.

If you write maker identify as **IEN - 7127**

PIPE FITTING . . Rupture disc made of graphite for pressure, vacuum

Source: FALLS INDUSTRIES INC.
31877 Aurora Road, Dept. IEN, Solon, Ohio



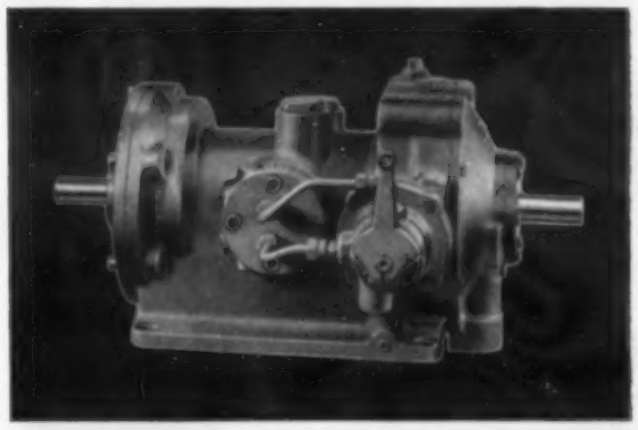
Accurately machined

Impervite trade names the impervious graphite from which this new single piece rupture disc is machined to fit standard 150-lb. flanges. The disc applies between a process vessel nozzle and its vent line. It is available for pressures from full vacuum to 75 lb. per sq. in. and in nozzle diameter from 2 to 24 inches. Other sizes and pressure ratings can be specified.

The disc will withstand temperature 325 deg. F. It is not subject to attack by most chemicals. It is non-porous. It will not contaminate material in process. It is replaced with a new disc when its diaphragm blows in or out due to excess vacuum or pressure.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions and Ratings . . See Page 50

If you write maker identify as **IEN - 7128**



ANY-SPEED OILGEAR FLUID POWER TRANSMISSION Solves drive problems —Improves machine performance

Even machines that lead their fields have benefited greatly by a change to the *ANY-SPEED* Oilgear Fluid Power Transmission . . . simply because top machine performance often depends on a speed flexibility other drives just don't have. The *Any-Speed* Oilgear is *just that*—from zero to 1600 r.p.m. And once you pick your best speed it stays there . . . or until you want to change. Smooth shading of speed all the way up or down. Full control manually, hydro-electrically, pushbutton or automatic remote. Small, durable, dependable, this "power package" installs easily, ends drive trouble, saves power, cuts maintenance to a sliver. Simple, accessible design. Drives off any constant speed source. Write for descriptive Bulletin 67110A. THE OILGEAR COMPANY, 1567 West Pierce St., Milwaukee 4, Wis.

If you write maker identify as **IEN - 7129**

Simpson Model 260
VOLT-OHM-MILLIAMMETER
$38.95 Dealer's net.

USE IT FOR:
- TV SETS
- RADIOS
- TRANSMITTERS
- BROADCASTING EQUIPMENT
- HOME APPLIANCES
- TWO-WAY RADIO COMMUNICATIONS SYSTEMS
- PHONE LINES
- AIR CONDITIONING SYSTEMS
- STARTER CONTROLS
- AUTO IGNITIONS, GENERATORS, BATTERIES
- MOVIE EQUIPMENT
- PANEL INSTRUMENTS
- TV CAMERAS
- AUTO LIGHTING SYSTEMS
- GENERATORS
- VOLTAGE SOURCES
- "HAM" RADIO EQUIPMENT
- CABLES
- CONNECTORS
- AUDIO FREQUENCY SOUND CURRENTS

. . . and write for your complimentary copy of "1001 Uses for the Simpson Model 260" 50 pages of uses.

BEST ALL-AROUND TESTER ON THE MARKET

BEST ALL-AROUND TESTER ON THE MARKET

RANGES:
20,000 OHMS PER VOLT DC
1,000 OHMS PER VOLT AC
VOLTS AC AND DC: 2.5, 10, 50, 250, 1,000, 5,000
OUTPUT: 2.5, 10, 50, 250, 1,000
MILLIAMPERES, DC: 10, 100, 500
MICROAMPERES, DC: 100
AMPERES, DC: 10
DECIBELS (5 RANGES): −12 TO +55 DB
OHMS: 0-2000 (12 OHMS CENTER), 0-200,000 (2,000 OHMS CENTER), 0-20 MEGOHMS (120,000 OHMS CENTER)

SIMPSON ELECTRIC COMPANY
5200 W. Kinzie St., Chicago 44 • EStebrook 9-1121
In Canada: Bach-Simpson, Ltd., London, Ont.

If you write maker identify as IEN - 7131

Control Costs!

Print the Weight with

New TOLEDOS

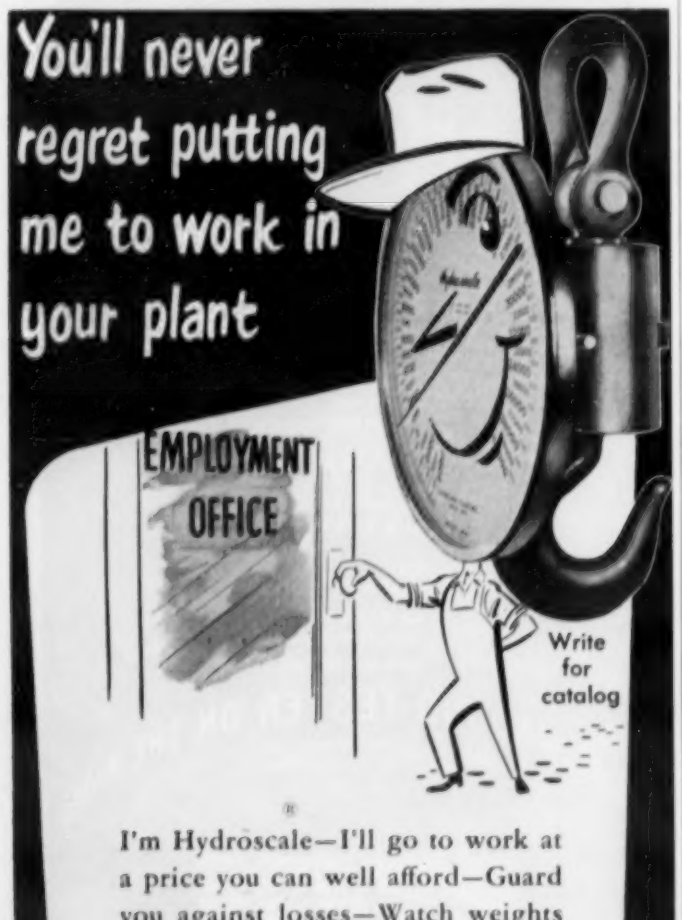
New Toledo Printweigh Scales meet your needs today for *closer cost control!* Stop human errors in reading, remembering, recording . . . provide accurately printed weights with split-second speed . . . *accurately* recorded!

Printweighs are available for dial type scales in the great new line of Industrial Toledos! *44 new features* include . . . new clean-line design . . . double-pendulum mechanism in one-piece sector . . . lifetime fulcrum. Send for new condensed catalog No. 2001. Toledo Scale Co., Toledo 1, Ohio.

TOLEDO.

Headquarters for Scales

If you write maker identify as IEN - 7132



I'm Hydroscale—I'll go to work at a price you can well afford—Guard you against losses—Watch weights on the dock, in production and processing—Help you make money as well as save it! My buddies are on the job from coast to coast eliminating the expense and inconvenience of ordinary weighing stations, making weighing practical and convenient—a part of your handling operation.

HYDROSCALE

Over 60 standard models
500 to 200,000 lbs.
Pound-Kilogram models,
Batching models, etc.

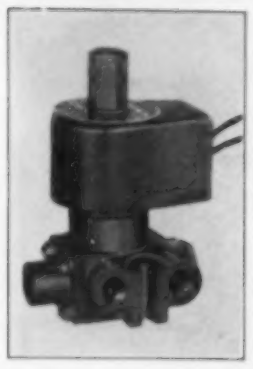
HYDROWAY SCALES, INC.
20624 WEST 8 MILE ROAD · P.O. Box 4754 · DETROIT 19, MICH.

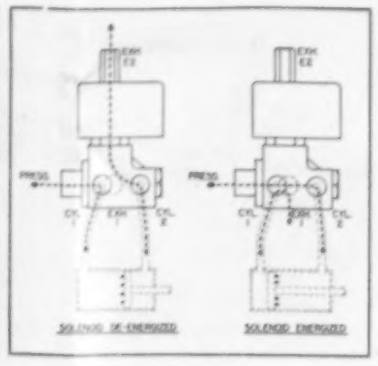
TRADE MARK REGISTERED U. S. PAT. OFF.

If you write maker identify as IEN - 7134

VALVE . . Solenoid operated, four way, for small power cylinders

Source: AUTOMATIC SWITCH CO.
391 Lakeside Ave., Dept. IEN, Orange, N. J.





Speed to 400 cycles per minute

Overall height is a little under 4½ in. with overall length at 3 in. and depth of 2 in. in this new midget 4-way solenoid valve. It is known as Bulletin 8345 and is designed to operate a double-acting cylinder or two single-acting cylinders where pressure is to be applied and exhausted alternately. Pressure range is 10 to 125 lb. for solenoid operation at 110 or 220-volt 60-cycle ac. It is maximum at 50 lb. on 110-volt dc. Power consumption is about 10 watts. The valve will handle air, water, light oil and other non-corrosive gases or liquids at temperatures to 212 deg. F.

The body is made of forged brass. The design is packless with internal crown seats and nylon discs. Metal parts, in contact with the fluid, are brass or stainless steel. The continuous duty solenoid coil can be either Class A, which is counted as standard, or Class H for high temperature operation. A molded Luxoline green resin coil construction is available for severe moisture conditions. The valve connections are threaded for ¼-in. pipe. Orifice diameters are $\frac{1}{16}$ in. on the inlet and $\frac{3}{32}$ in. on the exhaust. List price is $23.

If you write maker identify as IEN - 7135

MARKING . . Self-adhesive labels for quick pipe line identification

Source: W. H. BRADY COMPANY
727 W. Glendale Ave., Dept. IEN, Milwaukee 12, Wis.

Samples on request

All-Temperature designates a recently improved line of self-adhesive labels that can be applied on pipes operating at any temperature between minus and plus 300 deg. F. They can be employed also on pipes operating intermittently at temperatures to 450 deg. F. Adhesion is about 72 oz. per inch of width. Three printing styles are available for large, medium and small lines.

The labels conform to ASA Standard A-13 with the specific name of the material in the pipe line printed in bold black letters on the ASA-specified background color.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7136

MODERNIZE YOUR WARNING SIGNAL SYSTEM

with this

NEW extra-compact powerful

BENJAMIN SIREN!

TYPICAL APPLICATIONS OF THE BENJAMIN SIREN

for civil defense

for boiler alarms

for plant protection

This new siren is especially designed for modern multiple-signal installations, which overcome problems of atmospheric conditions, wind direction and industrial din. A small-yet-powerful high-torque, 10,000 r.p.m. motor and precision-machined housing makes possible extra-compact design. Famous Benjamin built-like-a-battleship construction prevents moisture from entering and assures long, trouble-free operation.

It's the 20th Century Pony Express!

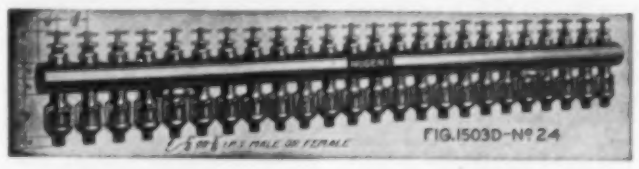
FREE SIGNAL BOOK! Send for your copy of this most complete book on signaling! Benjamin Electric Mfg. Co., Dept. O, Des Plaines, Ill.

609

If you write maker identify as IEN - 7137

PRESSURE AND FLOW ARE VITAL...

when it comes to machine lubrication, too!



FOR the lubrication of enclosed bearings and other hard-to-get-at parts where positive flow and pressure are vital, use Nugent Multiple Oilers. By means of needle valve adjustments, the Multiple Oiler directs an individual flow of oil to each bearing—assures positive lubrication of hard-to-get-at parts. Write for descriptive literature.

Wm. W. Nugent & Co., Inc.
418 N. Hermitage Ave. CHICAGO 22, ILLINOIS

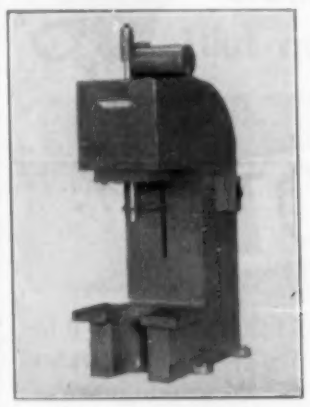
Est. 1897

Oil Filters, Oiling and Filtering Systems, Telescopic Oilers, Oiling Devices, Sight Feed Valves, Flow Indicators . . . *Representatives in Principal Cities*

If you write maker identify as IEN - 7138

AIR-HYDRAULIC PRESS

Two models deliver 2½ and 5½ ton from a 100-lb. shop air line



This press provides controllable hydraulic action for forming, flanging, marking, riveting, broaching, crimping, staking. It operates under effortless valve or pushbutton control. Stroke length is a little over 5 and 6 inches. Adjustment is through 2 inches. Throat is 6¼ inches. Base measures 9½ by 18 inches and 11 by 21 inches.

Multiplies pressure 50 and 110 times

1953 Catalog on request

AIR-HYDRAULICS, INC.
809-13 Belden St. Jackson, Mich.

If you write maker identify as IEN - 7139

for Eye-Level Readings . . .

AUTO-LITE

TEMPERATURE INDICATORS...

Precision-built indicators provide accurate temperature readings.

Low-cost protection . . . due to large, specialized production. Wide selection of dial ranges to meet specific requirements. Choice of stock types available as shown.

Send for new catalog, describing many thermometer styles.

THE ELECTRIC AUTO-LITE COMPANY
INSTRUMENT AND GAUGE DIVISION
TOLEDO 1, OHIO
NEW YORK · CHICAGO · SARNIA, ONTARIO

If you write maker identify as IEN - 7140

STEEL STAMPS
Three grades for every pocket book

HERCULES HOLDERS
and TYPE for gang numbering and interchangeable marking by hand or press.

when you need numbering machines, marking machines and marking products remember— "ACROMARK means accurate marking"

STANDARD AND SPECIAL MARKING MACHINES
Hand—Air-Power

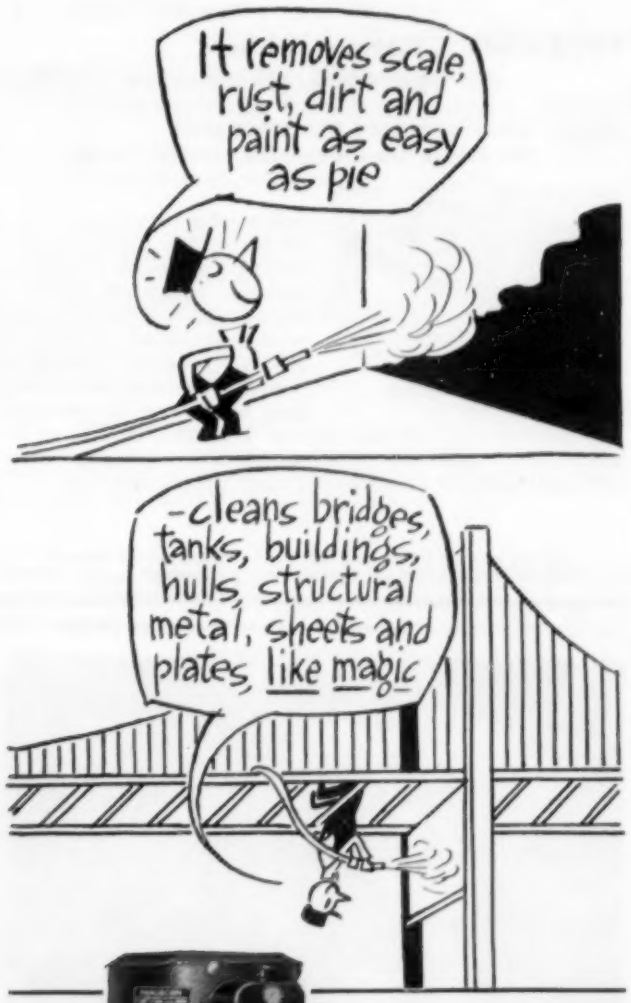
METAL and PLASTIC MARKING INKS

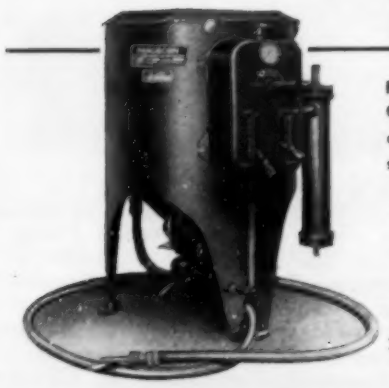
ACROMARK
THE ACROMARK COMPANY
7 MORRELL ST., ELIZABETH, NEW JERSEY

If you write maker identify as IEN - 7141

PANGBORN BLASTS *by don herold*

COST-CUTTING STORY OF THE PANGBORN BLAST CLEANING MACHINE





Pangborn Blast Cleaning Machine—available in six types, stationary or portable—delivers efficient, low-cost maintenance in any plant. $188 and up.
For details, write: PANGBORN CORP., 2300 Pangborn Blvd., Hagerstown, Md.

Pangborn

BLAST CLEANS CHEAPER
with the right equipment for every job

PANGBORN'S 50th ANNIVERSARY, 1904-1954

If you write maker identify as IEN - 7143

PROTECTING . . Safety shoe in twelve models for plant and office

Source: GRATON & KNIGHT COMPANY
356 Franklin St., Dept. IEN, Worcester 4, Mass.

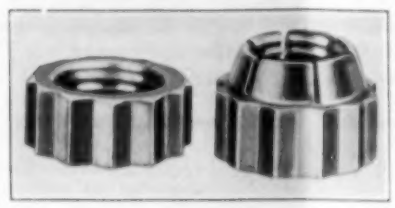
Bulletin shows line

New line of shoes employs a safety steel box toe, arch supporting steel shank, Goodyear welt construction and one piece leather counter. Twelve styles range from foundry brogans to oxfords for factory executives. A leather lining is employed under the steel toe. The insole is solid leather. A bellows tongue dirt excluder lies beneath the lacings. The upper portion of the shoe is soft pliable chrome elk leather. Two colors are tan and black. List price ranges from about $7.40 to $9.95.

If you write maker identify as IEN - 7144

FASTENING . . Twelve point nut to minimize need for tool clearance

Source: NATIONAL MACHINE PRODUCTS CO.
44225 Utica Road, Dept. IEN, Utica, Mich.



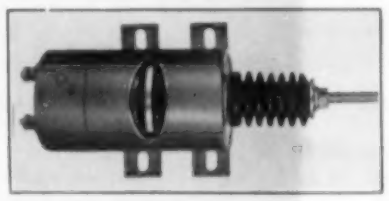
Matches socket wrench

Sizes range from ¼ to ⅝ in. for this new 12-Pointer nut. It is designed to be interchangeable for equivalent "light" or "finished" hexagon nuts. Its 12 points match the 12 lands in double hexagon sockets to distribute the driving load so the thin wall socket wrench can be employed without danger of breaking. The new nut is available in standard thread design and also in the Huglock and Marsden locking design.

If you write maker identify as IEN - 7145

SOLENOID . . For continuous duty, rates 10 lb. at 1½ in., 110 volt dc.

Source: SYNCHRO-START PRODUCTS INC.
Dept. IEN, Skokie, Ill.



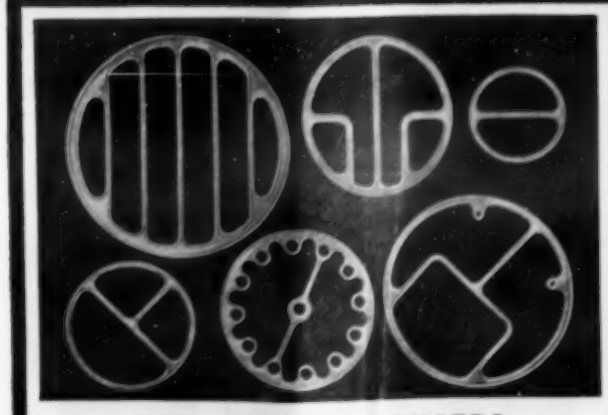
Available to order

Model SD is a new enclosed solenoid for heavy duty application in both pulling and holding. It can be supplied in specified standard and special operation to 110-volt dc. It rates 10-lb. pull on a 1½-in. stroke with 550-watt pulling input and 8-watt holding input. Housing dimensions are 2½ by 4⅝ inches. Connections are made at standard terminal screws or aircraft type AN connectors as specified.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7146

MELRATH GASKETS



FOR HEAT EXCHANGERS, CONDENSERS, CYLINDER HEADS

Style No. 20 (Special) Metal and asbestos double-jacketed gaskets for high temperatures and pressures. Made in any metal or shape to fit your needs.

"There's a Melrath Gasket for Every Purpose!"

MELRATH SUPPLY & GASKET CO., INC.
3501 MEMPHIS ST., PHILADELPHIA 34, PA.

If you write maker identify as IEN - 7147

Evans King-Size 10-ft. Steel Tape

STANDS UP STRAIGHT for UPRIGHT MEASUREMENTS

Those long upright measurements are easy and accurate with this new EVANS King-Size 10-ft. White-Tape. The 33% wider blade (full ¾") stays straight up without bending or buckling. You get a *free* belt clip and Tenite utility case with every tape. Sliding end hook for inside or outside measuring and . . .

it's marked so you don't have to figure! no other tape is marked this Evans way.

Whichever way you work, in inches or feet and inches, you read *instantly* without having to stop and figure.

The EVANS King-Size White-Tape Is the Top 10-ft. Tape Value at only $2.12 *Purchase from your supplier*

another EVANS value—

THE ONLY 12-FOOT POCKET WHITE-TAPE

Standard blade ½" wide

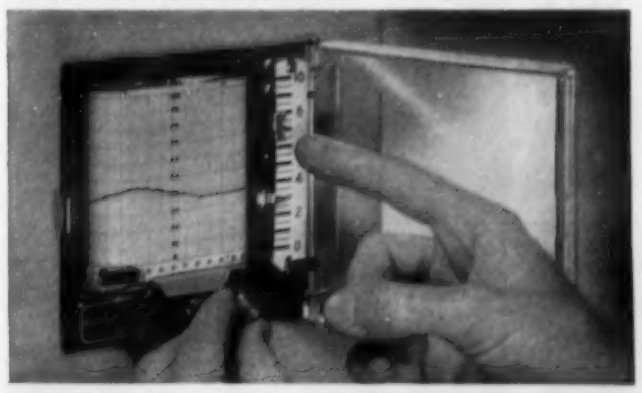
This L-O-N-G-E-R Pocket White-Tape only $1.89
Purchase from your supplier

Now, a pocket steel tape that measures a full 12 feet — eliminates the inconvenience and inaccuracy of adding two measurements as you do with shorter tapes. Exclusive EVANS double markings (same as King-Size above). Chrome plated case is *no bigger than cases for shorter tapes.* Self-adjusting sliding hook for 100% accurate inside or outside measurements. Each tape packed in FREE transparent Tenite utility case.

Evans & CO.
400 Trumbull Street, Elizabeth, N. J., U. S. A.

If you write maker identify as IEN - 7149

WHAT'S NEW AT BRISTOL . . .



Instrument men call Bristol's new METAGRAPHIC Recorder "...the biggest little instrument"

• Designed with the operator foremost in mind, the air-operated "human-engineered" Bristol METAGRAPHICS are easy to read, with numerals and calibrations sharply defined for maximum visibility.

The METAGRAPHIC's continuous valve-position indication, which is separate from the set-point indication, gives continuous data on control valve position and level of process operation. No switching is necessary to get reading.

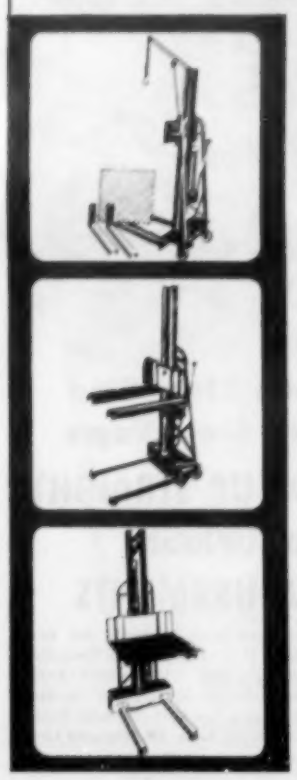
Write us today for the whole story on the "human-engineered" METAGRAPHICS. The Bristol Company, 107 Bristol Road, Waterbury 20, Conn.

BRISTOL Points the way in human-engineered instrumentation

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

If you write maker identify as **IEN - 7150**

Save—get 3 lift units for the price of one



The new Unit "3-IN-1" LIFT actually does three kinds of lifting jobs.

1. **SHOP BOOM**—Boom slips on by two pins in seconds. Perfect for any job lifting up to 500 lbs. over seven ft.
2. **FORK TRUCK**—Quickly slip on adjustable forks to lift from as low as 3½" to height of 55".
3. **PLATFORM LOADER**—To lift heavy boxes, drums, dies or machinery, simply lock rugged platform over forks.

Hydraulically operated, the "3-IN-1" LIFT lifts and lowers quickly! Handles easily in narrow aisles. Engineered for safety. Write for prices, complete details.

UNIT MFG. CO.
1221 HARMON PLACE
MINNEAPOLIS, MINN.

If you write maker identify as **IEN - 7151**

USES PENETROL TO STOP RUST!

THE JEFFREY MANUFACTURING CO. ESTABLISHED 1877 USES PENETROL CLEAR AIR-DRYING OIL

Jeffrey Aerodyne Mine Fan Casings take a lot of abuse from corrosive elements. They are kept in "good housekeeping" appearance with a minimum of upkeep and attention, with the aid of PENETROL as a paint additive.

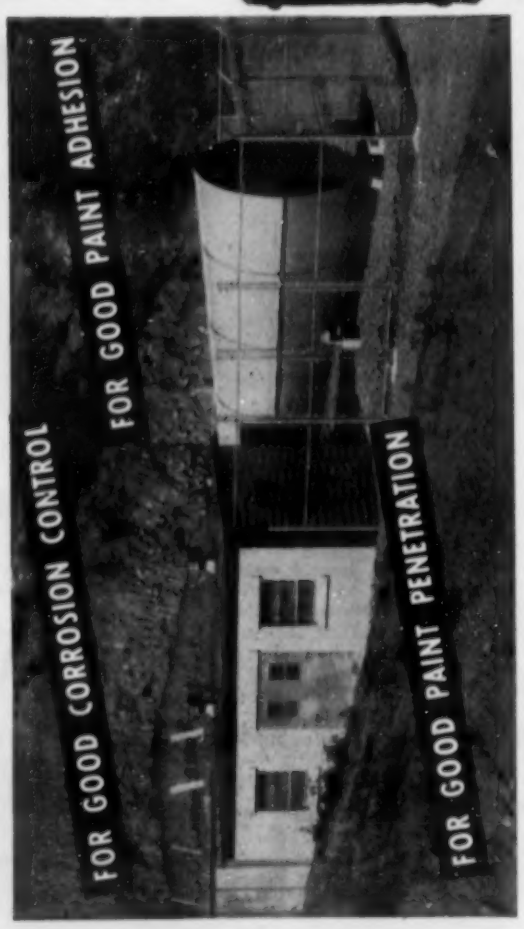
Mr. A. E. Condon, manager of sales of the Jeffrey Fan Division says: "We have been using PENETROL for painting fan casings for four years, and it has been doing a good job. The paint containing a liberal amount of PENETROL really penetrates, and has good adhesion qualities to the metal surface. It gives us long-lasting protection against rust and corrosion."
PENETROL has been used by the railroad, steel, shipping, oil, transportation and other industries for over 20 years . . .

to assure quick, long-lasting protection against rust and corrosion, with a minimum of money and labor!

PENETROL penetrates through the rust to the solid base metal . . . renders the rust completely inactive . . . and forms a tough protective film. This PENETROL film has exceptional adhesive qualities . . . dries in 18 to 36 hours to a slight surface tack. This property provides an exceptional bond or "tooth" for the following paint coat, but does not interfere with the easy application of the paint.
Use the time-proved, money-saving, structure-preserving PENETROL method to assure protection against rust to all inside, hidden, and exterior surfaces. Order PENETROL now!

PENETROL INDUSTRIAL PRICES:
5 Gal. $15.75; 30 Gal. $88.50; 55 Gal. $159.50, F.O.B. Hudson, Ohio.
FREE LITERATURE!

PENETROL is manufactured by THE FLOOD COMPANY
Hudson, Ohio



If you write maker identify as **IEN - 7153**

THREADING . . Motor driven machines mount Speed-Grip chuck, for pipe, bolts

Source: RIDGE TOOL CO.
Clark St., Dept. IEN, Elyria, Ohio

Mounts Speed-Grip chuck

Ridgid 400A Power Drive for threading, cutting and reaming pipe with hand tools, and Ridgid 500A for pipe and bolt threading, are new machines employing the company's new Speed-Grip chuck. The chuck jaws are closed on the work by a hand wheel, applying an impact action. The driving motor then adds to the holding action as it rotates the work. Release is by reversing rotation of the hand wheel. It will not bind. Model 400A handles ⅛ to 2-in. pipe, ¼ to 2-in. bolts and has sufficient power to drive 12-in. geared threading tools.

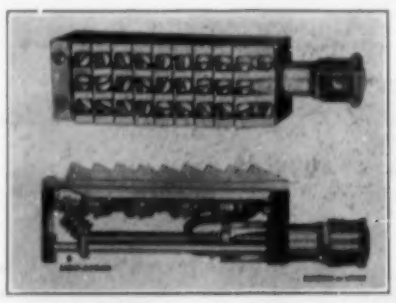
Model 500A is available with quick-opening Quadra, Dual and Mono die heads and with bolt, conduit and special dies. It also delivers lubricant on the work. Rating is for ⅛ to 2-in. pipe, ¼ to 2-in. bolts. Model 400 and Model 500 designate the two machines with wrench operated lathe type chucks.

Note—This item, combining the two new designs of machine, is by way of correction of item IEN-6026-54 in which we illustrated the Model 500A machine and described Model 400A in error.

If you write maker identify as **IEN - 7154**

SWITCH . . Eight pole, double throw, snap action for eight circuits at once

Source: GUARDIAN ELECTRIC MFG. CO.
1621 W. Walnut St., Dept. IEN, Chicago 12, Ill.



Positive action

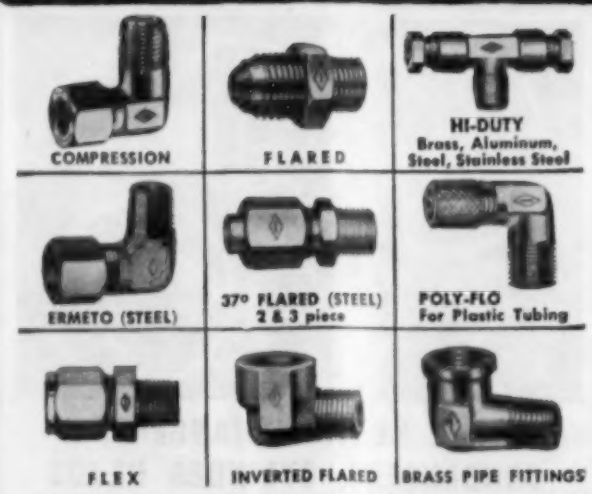
Eight independent but inter-related actions can be initiated at one time by pressing an operating button or throwing a lever with which this new switch can be equipped. Constant contact pressure is maintained, at 4 oz. per point, through the operating stroke until the positive snap action occurs in either direction. There is no dead center.

The contacts are rated for 10 amp. on 110-volt ac. at 60 to 400 cycles. The switch meets military specifications ANS-63 for shock and vibration resistance and for operation at minus 65 to plus 160 deg. F. It mounts in a 1½ by 1¼-in. panel opening. It weighs about 8 ounces. Its enclosure can be removed to permit inspection. An auxiliary single-pole double-throw circuit and a dial light can be added for test indication.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7155**

IF YOU USE TUBE FITTINGS
Choose from IMPERIAL'S Complete Line



Imperial offers a broad line of tube fittings (over 2500 sizes, types and styles) for virtually any tubing connection job where copper, aluminum, steel or other metal tubing is used. Also Imperial Poly-Flo Fittings for ¼" and ⅜" plastic tubing. Flexible hose and attachable fittings, ¼" to ½" equivalent tube size. Also complete line of tubing tools and shut-off valves.
ASK FOR CATALOG 3500.

The Imperial Brass Mfg. Co., 508 S. Racine, Chicago 7, Ill.
In Canada: 334 Lauder Ave., Toronto, Ontario
See Your Supply House

IMPERIAL Pioneers in Tube Fitting and Tube Working Tools

If you write maker identify as **IEN - 7156**

PRESS . . Pneumatic hydraulic rates 42 ton on 100 pound air supply

Source: DAYTON ROGERS MFG. CO.
2824 13th Ave., Dept. IEN, Minneapolis 7, Minn.

For utility use

The pull-down head on this new press is mounted on a pair of rods extending down into the base to connect to the piston of a hydraulic cylinder in the base. This cylinder is supplied with high pressure oil by a combination pneumatic hydraulic booster in which air pressure from a plant line acts on the large area of a stepped diameter piston to apply pressure on oil on the small end of the piston.

The press stroke can be varied from 2 to 11 inches. The press can be set to cycle automatically in a sequence of low pressure advance, high pressure operation and controlled retraction. It also can be controlled manually for any of these movements. Tools, to 24 in. in length, can be applied in the machine for forming, blanking and bending operations.

If you write maker identify as **IEN - 7157**

SEALING . . Plastic packing is based upon chemically inert teflon

Source: FLEXROCK COMPANY
3604-C Filbert St., Dept. IEN, Philadelphia 1, Pa.

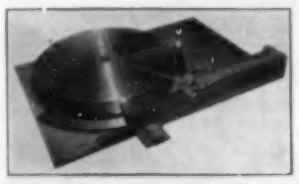
Particularly for maintenance

Flexrock 403 is a new packing composed of shredded teflon combined with binders and lubricants extruded into a cotton yarn jacket impregnated with graphite or mica. The packing is chemically inert and is not subject to attack by acids, alkalis or solvents. It can be used in a temperature range from minus 150 to plus 550 deg. F. It is installed after cutting a piece to length, coiling around the shaft and forcing it into the stuffing box. Continuous lengths range from ¼ to ¾ in. in rectangular cross section in $\frac{1}{16}$-in. increments.

If you write maker identify as **IEN - 7158**

INDEXING . . Rotary table, air operated, six or more stations

Source: AIR-HYDRAULICS INCORPORATED
218 Belden Road, Dept. IEN, Jackson, Mich.



Ready for tooling

Diameter ranges from 20 to 48 in. in the company's new line of air operated indexing tables in which the operating mechanism has been brought to the outside of the table itself. Air pressure is 60 to 175 pounds. Operation is free from back lash, skips or over-runs. A cushioned stop prevents jarring work that mounts in fixtures on the table top. Index speed and cushioning adjust to compensate for variations in load weight and size.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7159**

FILTERS

. . . that handle "super" corrosives under pressure. Porous KEL-F ® polymer filters fuming nitric acid, hydrofluoric acid, hydrogen peroxide and other corrosives, *continuously* . . . from minus 320°F. to 200°F. . . . without contamination. Excellent tensile and elastic properties prevent rupture, maintain high filtering efficiency.

Chemically-inert filters of KEL-F polymer are made in sheet, disc and tubular form with pore size of 5 microns.

KEL-F

For the names of manufacturers of these and other products of KEL-F polymer write for descriptive "BUYERS GUIDE" . . .
Chemical Manufacturing Division—Dept. A-6
The M. W. Kellogg Company
Danforth Avenue Jersey City 3, N. J.

TRI-FLUORO-CHLORO-ETHYLENE POLYMERS

®—"KEL-F" is the registered trademark of The M. W. Kellogg Company

If you write maker identify as IEN - 7160

MIXING . . Motor driven machine positions over several tanks in a line

Source: CONN & COMPANY
11 S. Marion St., Dept. IEN, Warren, Pa.

Bulletin 531

The mixing shaft in this new machine extends downward in removable assembly from its driving head. The head is mounted on a wheel equipped frame that also carries the coupling connected motor. The frame is equipped with wheels to ride a suitable track mounted above a line of tanks in which fluids are to be mixed. Two of the wheels are equipped with locks to secure the unit in position.

Drive can be specified for variable or single speed and in sizes from ½ to 10 hp. The new assembly supplements wheel equipped frames designed to straddle a tank while riding on the floor.

If you write maker identify as IEN - 7161

CORROSION PROOFING . . Plastics for hot melt strippable application

Source: EVENS-THOMPSON MFG. CO.
11360 Kaltz Ave., Dept. IEN, Center Line, Mich.

Technical data upon request

Four new products have been added to the Plasto line of hermetic seal hot melt strippable coatings. Three are the hot melt variety and one is a soft oil concentrate that mixes with water to be sprayed, dipped or brushed.

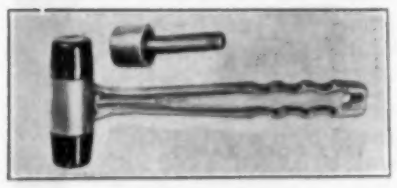
Evenschrome Mask No. 3-E is made of Eastman butyrate plastic. It will resist baking temperatures to 305 deg. F. This material contains no oil and is particularly suited to mask chrome plating and armature shafts during baking.

Evensclear No. 1 and Evenshard No. 12 are made of ethyl cellulose plastic. The first adds good appearance as well as corrosion protection. It is available in clear green or red tint. The other material is suited for pre-manufacture of small masking caps as well as to coat tools, gears and metal parts.

If you write maker identify as IEN - 7162

HAMMER . . Soft face design interchangeable tips in aluminum body

Source: BONNEY FORGE & TOOL WORKS
721 Meadow St., Dept. IEN, Allentown, Pa.

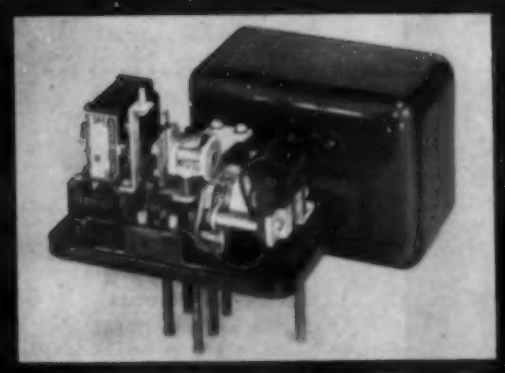


Details on request

The "I beam" handle is integral with the head in this new hammer. It takes interchangeable tips made of plastic, copper or other specified metal. The hammer is designed to remove blemishes from sheet metal and for application where hammer blows must not damage a finished surface.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7163



Time Delay Relay

When coil is energized, 20 ampere contacts are immediately closed. The delay action is accomplished by a Telechron motor with a mechanism calibrated in 15 second steps, adjustable from 15 seconds to 5 minutes. Timer contacts are S.P.D.T. and rated at 12 amps. **Instantaneous recycling.** 115 VAC coil operation. Dust tight Bakelite case.

IMMEDIATE DELIVERY FROM STOCK

Telephone
AUstin 7-0709

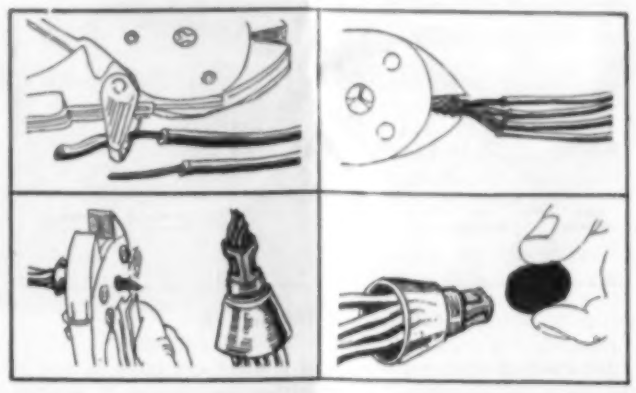
Write for New 1954 Relay Sales Catalog C-5
JUST OUT!

Relay Sales
4721 W. MADISON STREET
DEPT. 9, CHICAGO 44, ILL.

If you write maker identify as IEN - 7164

CONNECTOR . . Splice fitting is applied with plier type crimp tool

Source: BUCK ELECTRICAL MFG. CO.
139 Highland Parkway, Dept. IEN, Roselle, N. J.



Patents applied for

Nycap trade names a new two part molded nylon fitting. Nycapper trade names the hand tool with which wiring is prepared and the fitting crimped to grip it solidly. The fitting is approved for use on all combinations of solid and stranded wire from No. 18 to No. 12 and for temperatures to 220 deg. F.

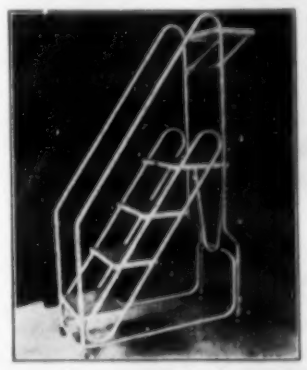
The skirt portion of the fitting contains a copper splicing sleeve with a shoulder that prevents damage to conductor strands even though two or more wires are pulled in opposite directions. The red nylon sealing cap screws on, after the fitting has been crimped on the wire, to complete a safe compact splice that requires no further insulation.

The tool can be employed to cut the wires to length, to strip the insulation, to twist them together and finally to crimp the fitting. It will cut and strip insulation from copper and aluminum wire including non-metallic cable to No. 10. It also applies in twisting, pulling, bending and gaging wire, to driving screws and to ripping non-metallic cable sheath.

If you write maker identify as IEN - 7165

LADDER . . Tubular aluminum frame caster mounted, non-skid rubber treads

Source: D. R. CARD COMPANY
828 Merchandise Bldg., Dept. IEN, Minneapolis 3, Minn.



Assembles on job

The company announces takeover of production as well as sales for the Sturdi-Lite step ladder, previously described IEN-13172-47. The ladder is available with three or four steps in an 18-in. width for narrow aisles. It can be equipped with a shelf or a basket at the top. Larger sizes, with 5 and 6 steps, are made 24 in. in width and are fitted with a top shelf.

Ball bearing casters are provided on the two rear legs and a spring loaded swivel caster is mounted beneath the front. The front legs lower to rest securely on their rubber feet on the floor when an individual steps on the ladder and so adds his weight to it. The spring lifts the feet from the floor when he steps off. The ladder is shipped knocked down in a carton.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7166

FISHER
Automatic Controllers

FISHER AUTOMATIC CONTROLLERS give you more for your money because they stay on the job—minimizing "out-of-service" production expenses that quickly amount to many, many times the cost of the controller.

You actually save money when you specify Fisher Pressure Regulators — Pump Governors — Liquid Level Controllers — Pilot Operated Regulators — Lever and Float Valves — Intermitters — Gas Regulators — Valve Positioners.

FISHER GOVERNOR COMPANY, Marshalltown, Iowa

If you write maker identify as IEN - 7167

TO ANSWER ALL YOUR QUESTIONS ON FIN-PIPE RADIATION*

write
KRITZER

*KRITZER BASEBOARD HEATING
KRITZER RADIANT HEATING
KRITZER FIN-PIPE HEATING

See your Jobber for Kritzer Products

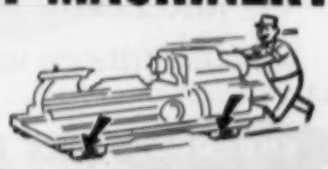
IF IT'S KRITZER, IT'S RIGHT, SIR!

KRITZER
RADIANT COILS, INC.
2901 Lawrence Avenue, Chicago 25, Ill.

If you write maker identify as IEN - 7168

now you can
MOVE HEAVY MACHINERY

or tons of equipment, materials or supplies with a roller skid having the capacity to carry loads 3200 times its own weight . . .



IN ANY DIRECTION

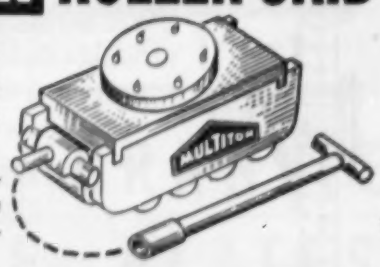
. . . making 90° turns — or ANY kind of turn you desire up to 360° — giving you maneuverability into the tightest spots . . .

QUICKLY AND EASILY

Does away with old-fashion roller-bar methods. Light in weight, easy to store, you save labor and costly handling . . .

WITH THE NEW MULTITON ROLLER SKID

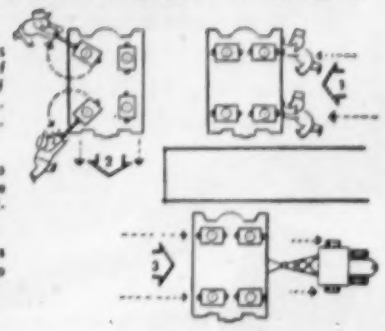
EQUIPPED WITH THE UNIVERSAL SWIVEL PLATE ACCESSORY . . .
Specially designed for easy moving and turning of even the heaviest loads.



HERE'S HOW MULTITON CAN WORK FOR YOU!

As in this example . . .

1. Production machine is moved broadside out of location. Note position of four Universal Swivel Plate-Equipped MULTITON ROLLER SKIDS.
2. Crew is now swiveling two left-hand skids 90°, while right-hand skids have already been turned.
3. If a longer movement is necessary, power is used to pull load.

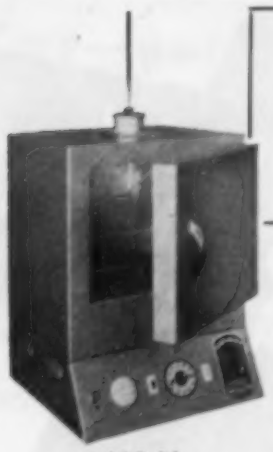


Let us show you how MULTITON can meet your specific needs. Write for Bulletin 1E today.

STOKVIS ✿ EDERA & CO., INC.

18 Secatoag Ave., P. O. Box 249, Port Washington, N. Y.
POrt Washington 7-3390

If you write maker identify as IEN - 7170



HUPPERT KH 1200 LABORATORY OVEN

Equalized oven heat at all times

Results from Huppert Ovens Are Always Accurate. Thermostatic control accuracy ½ of 1° C. at any setting up to 425° F.—220° C. This is achieved by a double venting system for constant dispersion of fumes and other exhaust air, permitting a cleaner operation and better distribution of heat. Work chamber is stainless steel 12" x 10" x 10".

$95.00
Complete with thermostatic control and heat range switch

All Stainless Steel
$125.00
(Thermometer $5.00 extra)

ALSO HUPPERT 5700 SERIES OVEN

Model	Wide	I. D. High	Deep	Wattage	Temp. Range	Price
5700LT	20"	15"	19"	1650	350° F. Maximum	$180.00
5700MT	20"	15"	19"	1870	400° F. Maximum	180.00
5700HT	20"	15"	19"	2250	500° F. Maximum	180.00

1 hour timer — $10.00 additional

Write for literature

K. H. HUPPERT COMPANY
6856 Cottage Grove Avenue, Chicago 37, Illinois
Manufacturers of Electric Furnaces and Ovens

If you write maker identify as IEN - 7171

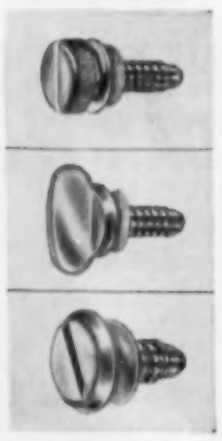
Why change cowl fastener size every time tolerances vary .010" ?

SOUTHCO quick release fasteners

PROVIDE ± TOLERANCES AS REQUIRED

Industrial tolerances, provided only by Southco Quick-Release Fasteners, are designed to accommodate variations in thickness normally encountered in metal working. No longer is it necessary to call out a different size precision type fastener because of a few thousandths variation. You eliminate a serious stock problem and reduce assembly time when you specify SOUTHCO.

You can easily choose the right Southco Quick-Release Fastener from a wide variety of stock sizes which include two diameters and three head styles.



The Southco Handbook makes it easy to pick the proper fastener. Write for your copy today. Southco Division, South Chester Corporation, 241 Industrial Highway, Lester, Pa.

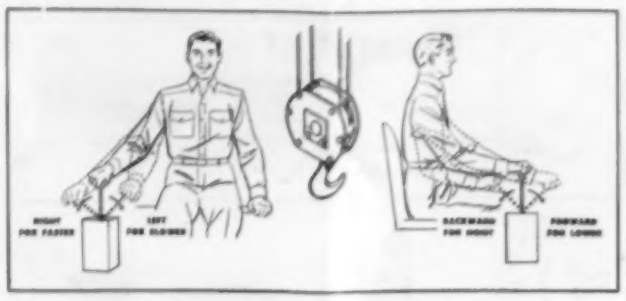
© 1954

SOUTHCO DIVISION
SOUTH CHESTER CORPORATION
241 Industrial Highway, Lester, Pa.
Please send me, without cost, the 24 page SOUTHCO FASTENER HANDBOOK ☐
Please have representative call ☐
NAME_____
POSITION_____
COMPANY_____
ADDRESS_____
CITY_____ZONE_____STATE_____

If you write maker identify as IEN - 7173

CRANE . . Magnetic controller and eddy current brake for hoist motor

Source: WHITING CORPORATION
15629 S. Lathrop Ave., Dept. IEN, Harvey, Ill.



Bulletin Sec. 300-Unit 78

Selectodyne trade names a new control available on any of the company's overhead cranes, either new or now in service. The control permits sensitive hoisting and lowering of either heavy of light loads. It consists of a dual master switch, a magnetic hoist controller and an eddy current brake.

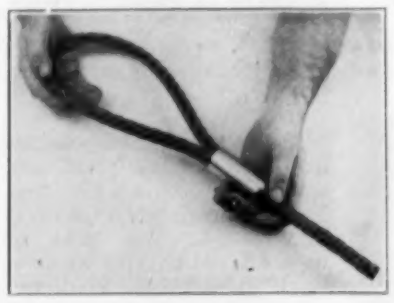
One circuit of the dual master switch controls torque and speed of the motor through secondary resistors. The other circuit varies the retarding torque on the eddy current brake. Both are under direct control of the crane operator. He moves the master switch backward to hoist, forward to lower, right for faster and left for slower operation of the load hook.

The new equipment can be employed in connection with the crane's automatic load brake to prevent loads from settling downward at any of the control's eleven speed points, even when the load exceeds the crane's rated capacity. This brake is effective independent of any conditions that may exist in the electrical circuits.

If you write maker identify as IEN - 7174

WIRE ROPE FITTING . . Clamp made of aluminum is compressed on rope

Source: JONES & LAUGHLIN STEEL CORP.
3 Gateway Center, Dept. IEN, Pittsburgh 30, Pa.



The JalKlamp

The company announces its appointment as exclusive distributor of a new aluminum alloy splicing clamp, made in Sweden under patents held by Gerhard Rohland of Goteburg. The clamp is applied by a motor operated hydraulic press in connection with dies for given rope diameters. These dies and the press are available on a lease basis from the company.

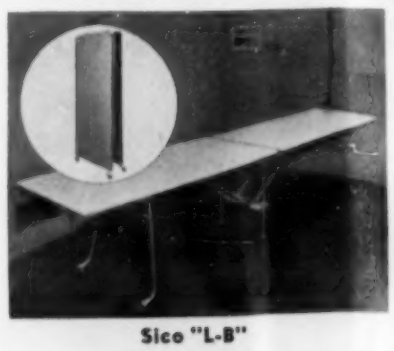
A rope is measured, cut and inserted into the oval shaped clamp. Then the clamp and rope are positioned in the press dies and pressure to 300 ton is applied. This pressure causes the aluminum to flow cold into the spaces between the wires in the strands and between the strands themselves. It becomes an integral part of the rope and closes all openings into which water might enter the splice. The equipment, available at present, will handle wire rope up to ¾ in. in diameter. The fittings are available in sizes for rope to 2 inches.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7175

A PAID NEWS ADVERTISEMENT BY SEATING, INC.

CAFETERIA SEATING . . . folding table seats more, stores easily in less space



Sico "L-B"

Seating space has been increased, storage area decreased and simplified set-up improved in the new model Sico "L-B" table designed for use in multi-purpose rooms and cafeterias by Seating, Inc., national manufacturers of folding tables and seating equipment in Minneapolis, Minnesota.

Seven 12-foot "L-B" tables store in a 30" by 71" space, as compared to the 30" by 74" space required by twelve traditional 6-foot folding leg tables, thus storing twelve extra lineal feet of table area with the Sico units.

Constructed of arc-welded structural steel tubing, the table features the patented "Floating Fold" action that permits rapid, non-tip set-up by one person and eliminates hinges that pinch fingers and collect food and moisture. One of the major faults of other rolling tables, "traveling," has been eliminated in the "L-B". Two thick rubber pads resist skidding when the table is unfolded.

The table top is of ¾" plywood, urea bonded with hardwood facing, and has a plastic laminated-bonded surface that resists cuts, stains and abrasions. Height above the floor is 29" and area is 30 square feet.

For additional information and prices on the Sico "L-B" table, write Seating, Inc., 6045 Pillsbury Ave., S. Minneapolis 19, Minnesota.

If you write maker identify as IEN - 7176

The Versatile BD Wheel is used for weld grinding, deburring, notching, slotting, cutting-off, etc.

Norton **REINFORCED WHEELS . . .**

4 Great Team-Mates for your "TOUCH OF GOLD"

Here's the line-up: Two hub-type wheels (BD rigid and BFR semi-flexible); one straight wheel (BF semi-flexible); one cut-off wheel (BN).

Add outstanding versatility to strength and to safety, multiply by four and you'll know why this Norton team rates as the "Big 4" among reinforced wheels. Together, they cover an endless list of applications, ranging from light finishing to cutting wire rope. And they do every job with the extra safety, service life and economy that add the real "Touch of Gold."

See your Norton Distributor for the reinforced wheels you need. Or write to NORTON COMPANY, Worcester 6, Mass. for the Brand New Catalog on Reinforced Wheels. Distributors in all principal cities. *Export:* Norton Behr-Manning Overseas Inc., Worcester 6, Mass. W-1554

NORTON ABRASIVES
Making better products . . . to make other products better

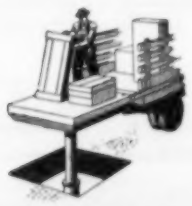
If you write maker identify as IEN - 7177

Rotary®

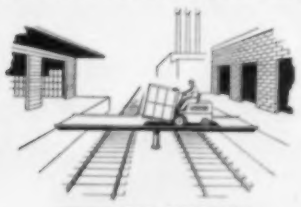
Oildraulic® Power

cuts the cost of lifting heavy loads

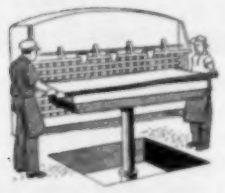
LEVA-DOCK RAMPS
Self-leveling hydraulic ramp



LEVELATOR LIFTS
For raising and lowering heavy loads



TRANSFER BRIDGES
Recess between tracks when not in use



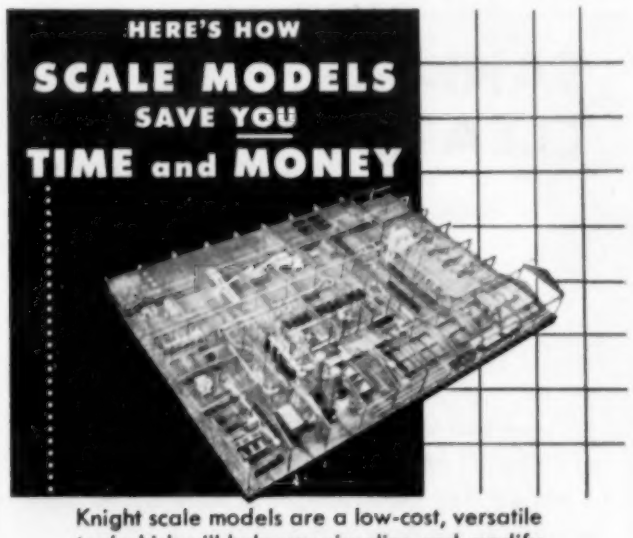
PRODUCTION LIFTS
For faster, less costly machine feeding

Circle the items you want catalogs on, tear out and mail to:

ROTARY LIFT CO.,
1150 Kentucky, Memphis 2, Tenn.

If you write maker identify as IEN - 7179

If you write maker identify as IEN - 7180



If you write maker identify as IEN - 7181

If you write maker identify as IEN - 7182

BURRING . . Multi-spindle machine for plastic and metal work pieces

Source: MECHA-FINISH CORPORATION
300 W. South St., Dept. IEN, Sturgis, Mich.

Built to order

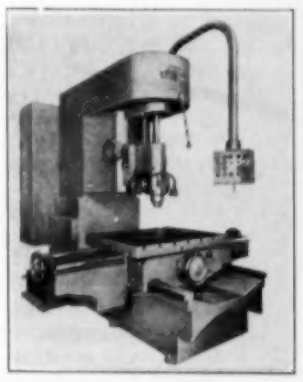
Work pieces such as bodies, caps, gears, pressure plates, impellers, valves, in the form of castings, forgings or machined parts are positioned in fixtures on the ends of the spindles in this new Mechamatic machine. The work and spindles are lowered into a tank where a wet abrasive slurry is kept in controlled high speed motion. Each spindle can be adjusted to favor the area or surface to be worked upon for a predetermined time cycle. The spindle then emerges from the slurry, the holding fixture opens for removal of the piece, while it is being washed and flushed ready for insertion of the next piece.

The largest unit the company has built measures approximately 9½ by 9½ ft. and stands about 10 ft. in height. The annular portion of the tank, carrying the abrasive slurry, is about 18 in. in width and depth. Work pieces for a machine of this size can measure 9 to 10 in. in greatest overall dimension. The largest machine is equipped with 14 spindles. Each has its own pneumatically work holding fixture, to specification.

If you write maker identify as IEN - 7183

MILLING . . Vertical machine also designed for boring and drilling

Source: W. B. KNIGHT MACHINERY CO.
3920 W. Pine Blvd., Dept. IEN, St. Louis 8, Mo.



Bulletin, "Electromill"

Three motors, each with Thymotrol electronic variable speed control, are belt connected to the spindle drive, the spindle feed and the table feeds in this new Electromill. The belt connection and the variable control take the place of speed and feed change gears. Control centers at a pendent panel that can be moved to the front or either side of the machine. The sheave that drives the spindle is designed to serve also as a flywheel to absorb shock from the cutting action at the tools.

Two sizes provide 30 and 48 in. of longitudinal table travel. Both have 30 in. of cross table travel and provide a maximum throat dimension of 35½ in. in depth and 18 in. in height. Maximum distance, table to spindle, is 27½ inches. Table working surface is 25 by 36 in. on one machine and 36 by 48 in. on the other.

Spindle speeds can be specified in any range between 40 and 2,500 rpm. in a 25 to 1 ratio. Table feeds range from 1 to 100 ipm. with rapid traverse in directions at 100 ipm. The spindle downfeed can be adjusted to any rate to 20 ipm.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7184

If you write maker identify as IEN - 7185

In Canada: Crane Packing Co., Ltd., 617 Parkdale Ave., N., Hamilton, Ont.

If you write maker identify as IEN - 7186

If you write maker identify as IEN - 7188

SPECIAL METAL FABRICATIONS TO YOUR SPECIFICATIONS!

Allied can supply your requirements for any special metal fabrication for use in processing or manufacturing!

- TRAYS
- RACKS
- TANKS
- FIXTURES
- RETORTS
- MUFFLES
- CRATES
- BASKETS
- SPECIALTIES

Our modern, up-to-date facilities are equipped to fabricate practically any type of special assembly. Look at this list of precision-built products . . . recognize some of them? We can build these and many others to your specifications . . . from your prints . . . or, we will develop working prints for you.

Write Today! *Let us help you solve your problem. Free literature on request!*

AMS

Allied

METAL SPECIALTIES, INC.

P.O. Box 235-D • Hampden Station • Baltimore 11, Md.

A Few Choice Distributorships Still Available!

If you write maker identify as IEN - 7189

Protect spare parts in tough VISQUEEN® film

"Visible inventory"—spare parts exposed to view in tough VISQUEEN film—will speed up handling, cut labor costs. And you won't need heavy grease to protect from rust, because VISQUEEN locks out moisture, won't split, crack, shatter or run.

Converters of VISQUEEN film will be glad to discuss rust-inhibiting, high visibility packaging with you. Mail the coupon for names of those serving your area.

Important! VISQUEEN film is all polyethylene, but not all polyethylene is VISQUEEN. VISQUEEN film is produced by process of U.S. Patents No. 2461975 and 2632206. Only VISQUEEN has the benefit of research and technical experience of The VISKING Corporation, pioneers in the development of pure polyethylene film.

VisQueen® film . . . a product of

THE VISKING CORPORATION

World's largest producers of polyethylene sheeting and tubing

Plastics Division, Terre Haute, Indiana

In Canada: VISKING Limited, Lindsay, Ontario

In England: British VISQUEEN Limited, London

THE VISKING CORPORATION, BOX IE6-1410

Plastics Division, Terre Haute, Indiana

Send me names of converters of VISQUEEN film serving my area.

Name _____

Company _____

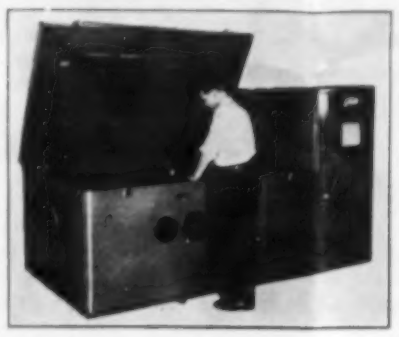
Address _____

City _____ Zone ____ State _____

If you write maker identify as IEN - 7191

TESTING . . Environment chamber ranges minus 100 to plus 600 deg. F.

Source: CONRAD INCORPORATED
52 W. 4th St., Dept. IEN, Holland, Mich.



Over all is 700 deg. F.

Temperature can be held within 2 deg. F. of any set point in the overall range of this new environment chamber. Temperature can be increased or decreased at any desired rate by means of automatic recording controls and these controls can be supplied for recurrent cycles. Controls and connections are made through front and side access ports. The top hinged door permits viewing the work under test. The work chamber measures 48 by 36 by 24 inches. Overall length is 116 inches. Width is 50 inches.

Inconel sheath heating elements, rating 3 kw., are employed to raise the temperature to the maximum of 600 deg. F. A percentage timer proportions the input for correct balance at any given set point. Fast temperature draw down is by force venting the heated air and by shifting to the double cascade refrigerating equipment, enclosed in the housing, when temperature reaches plus 200 deg. F. Cooling from ambient temperature to minus 100 deg. F. requires about an hour. The refrigerating equipment employs Freon 13 and 22.

If you write maker identify as IEN - 7192

TRUCK . . Engine driven fork lift, two ton, gasoline or diesel engine

Source: BUDA COMPANY
15401 S. Commercial St., Dept. IEN, Harvey, Ill.

Bulletin 1681

Model FTP40-24, with a 49-hp. four-cylinder gasoline engine, and Model FTPD40-24, with a 40½-hp. four-cylinder diesel engine, are two new trucks in the company's industrial line. The engines are both Buda manufacture. Parts are 85 per cent interchangeable. Both trucks are available in five standard mast heights with lifts maximum at 72 to 120 inches. Both can be specified with a torque converter. The two-ton load capacity is based on 24-in. load center. Pneumatic tires are standard.

The truck measures 91 in. in length without the forks. It operates on a 49-in. wheel base. It measures 43 in. in width and can be turned in 72-in. intersecting aisles. Mast height, in lowered postion, measures 65 to 83 inches. Height, extended, measures 98 to 146 inches. Tilt is provided 5 deg. to the front and 10 deg. to the rear. Lift speed, with a rated load, is at 45 fpm. Travel speeds are low at 5.4 and high at 10 mph.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7193

You can PUNCH IT FULL OF HOLES and still have GREATER STRENGTH with LESS METAL . . .

Pattern 6-WL

RIGID-tex METALS

• Here's a metal so rugged that it can be punched full of holes, stamped, and fabricated in any way. Use it for all sorts of products — television chassis, electronic equipment, plane, ship, and auto parts, home appliances—and still *use less metal.* Because RIGID-TEX METALS are three-dimensional, design-strengthened and textured, they have greatly increased rigidity. Lighter gage metals can be used, thus *saving critical materials.*

You'll find a thousand cost-reducing, profit-making uses for RIGID-TEX METALS—especially in times when the choice of the *right* metal means the success of your products. (Available in all ferrous and non-ferrous metals—solid or perforated—sheet or strip.)

Send for new 16-page complete catalog . . . on company letterheads, please or see Sweets Design File 1a/Ri.

RIGID-tex METALS

RIGIDIZED METALS CORPORATION

6646 OHIO STREET, BUFFALO 3, N. Y.

U.S. & Foreign Patents

See us at the Cooking & Heating Appliance Manufacturers Show, June 7-9, Booth 70, Washington, D. C.

If you write maker identify as IEN - 7194

TURN PIPE DREAMS INTO PIPE BENDS

Pipe, tube and structural bending is now simplified with a PEDRICK PRODUCTION BENDER. Heretofore difficult bends, such as offsets and off-plane bends, can now be made in production quantities at an amazingly low cost. ALL PEDRICK PRODUCTION BENDERS are complete with motor, and are equipped with automatic duplicate bending relays.

Write for Descriptive Folder. Dept. 7

Prices start as low as $1575.00

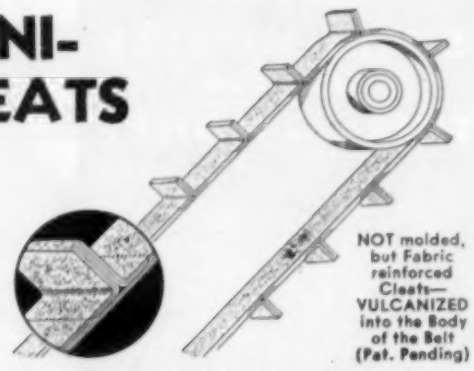
(Motor and all Electrical Equipment included)

PEDRICK TOOL & MACHINE CO.

3640 N. Lawrence St. Philadelphia 40, Pa.

If you write maker identify as IEN - 7195

SANI-CLEATS



Solves your Cleated Belt problems with 47 types of belting to handle a variety of products.

PROMOTES SANITATION as there are no gaps or crevices. No bolts — rivets or metal.

Highly flexible SANI-CLEATS can bend parallel to belt. Can be made stiff or flexible as desired.

Any Height, Width & Spacing with SANI-CLEATS™

WRITE FOR LITERATURE

•

A. J. SPARKS & COMPANY

863 Grandville Ave., S. W.
Grand Rapids, Michigan

If you write maker identify as IEN - 7196

ATLAS

TRADE MARK REG.

HIGH or LOW PRESSURE REGULATING VALVES

The valve at the right, commonly used on hydraulic presses, reduces pressures as high as 6,000 lb. per sq. in. *without shock.*

We are picturing it here to show that ATLAS manufactures a wide range of regulating devices and for every service from the lowest to the highest pressures. We have been in the regulating business *exclusively* for more than a half century.

Below is a list of our principal products. Check the items on which you want data. Clip out and mail to us with your name, firm name, and address. For other ATLAS regulating and control devices see the THOMAS DIRECTORY.

ATLAS VALVE COMPANY

REGULATING VALVES FOR EVERY SERVICE

263 South St. Newark 5, N. J.

Represented in Principal Cities

- ☐ Back Pressure Valves
- ☐ Balanced Valves
- ☐ Boiler Feed Regulators
- ☐ Control Valves
- ☐ Damper Regulators
- ☐ Exhaust Control System
- ☐ Float Valves
- ☐ Oil Control Cocks
- ☐ Temperature Regulators
- ☐ Pressure Regulators
- ☐ Pump Governors
- ☐ Reducing Valves

If you write maker identify as IEN - 7197

new designs on the board?

GRC TINY MOLDED NYLON PARTS

may be the difference between "problems" and **profits!**

Gries' unique single cavity molding facilities are *flexible*—provide the practical answer to countless problems of product design and improvement. No matter how tiny, or how intricate, GRC molds nylon parts to meet your exact specifications, with precise tolerances and uniform quality. And, because GRC methods are completely automatic, costs are surprisingly low — GRC tiny nylon parts are produced, completely trimmed and ready for use, in one high-speed, money-saving operation!

Send prints for quotation; write today for Bulletin and Samples.

GRC MOLDS ALL THERMOPLASTICS SWIFTLY, DEPENDABLY, ECONOMICALLY!

Automatic Continuous and Individual Inserts! Single Parts!

Quick deliveries on quantities of 25,000 to millions.

NO SIZE TOO SMALL

MAXIMUM SIZE .025 oz—1" long

NO MINIMUM SIZE!

LOW MOLD COSTS!

GRIES REPRODUCER CORP.

World's Foremost Producer of Small Die Castings

139 Beechwood Ave., New Rochelle, N. Y. • Phone: NEw Rochelle 3-8600

If you write maker identify as IEN - 7198

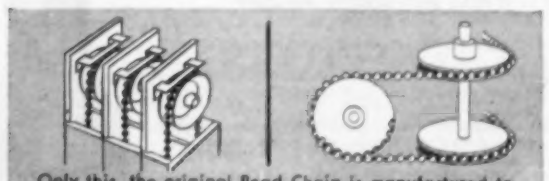
FOR POSITIVE, LOW-COST

SPROCKET DRIVES...

it will pay you to use genuine

Bead Chain

Only the manufacturer of *genuine* Bead Chain offers you a new, more versatile belt drive that will accurately time and control the movement of all types of devices. Among such applications are radio and television tuners, recorders, air conditoners and timng devices. Costly gearing mechanisms can be eliminated and efficiently replaced by the specially designed sprockets that accurately fit the indivdual beads *without slippage and backlash.* Friction is at a minimum and tensile strength of the Bead Chain belt (from 15 to 200 lbs.) is very high in proportion to size and weight.



Only this, the original Bead Chain is manufactured to such close tolerances that it can be applied at low cost to U type or positive non-slip sprockets!

Write to us today for detailed information about sprockets and Bead Chain belts. It can save you a lot of time and money later.

THE BEAD CHAIN MANUFACTURING CO.
59 Mountain Grove St., Bridgeport, Conn.

Please send me information about Bead Chain sprocket drives.

NAME _____

TITLE _____

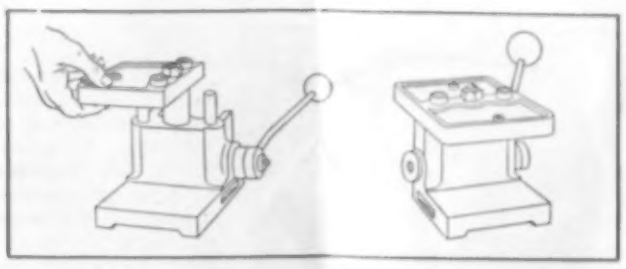
ADDRESS _____

THE BEAD CHAIN MANUFACTURING CO., Bridgeport 5, Conn.
original and world's largest producers of Bead Chain

If you write maker identify as IEN - 7200

VISE . . Drill jig unit positions and holds work on a machine

Source: ACCURATE BUSHING CO.
443 North Ave., Dept. IEN, Garwood, N. J.



Bulletin, "Drill Jig Vise"

Swing Away designates new patented construction of the Lift Swing drill jig vise. Operating a lever on the side of the unit unlocks and lifts the top plate. Then the operator can pick the plate off its two guide pins and swing it to either side on its center pin. This movement clears the work surface. The plate can be returned to operating position, brought down, and locked by operating the lever. Single and double end plates are interchangeable on the center pin and guide pins.

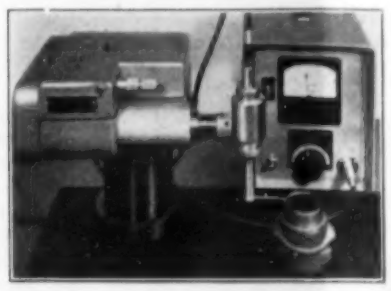
Base dimensions are 3⅜ to 8⅝ in. in width, 2⅛ to 6 in. from front to back of the work area. Nominal opening is 2 to 7 inches. Clamping range is from 1/32 in. below to ⅜ in. above the nominal range.

The company also manufactures a Center Post design in which the top plate pivots vertically to the rear after it has been lifted clear of its two guide pins. One size measures 7⅞ in. between the pins and 7 in. from front to back or 3½ in. one each side of the centrally located pins.

If you write maker identify as IEN - 7201

GAGE . . Electronic instrument reads surface roughness in micro inches

Source: MICROMETRICAL MFG. COMPANY
345 S. Main St., Dept. IEN, Ann Arbor, Mich.



Bulletin LT92

Linear Pilotor Type AD is a new mechanism for use with the company's Type-G Profilometer Tracer to measure the roughness of short or hard to reach surfaces. The new unit supports the tracer of the Type-G instrument and provides a vibrationless straight line tracing action that is variable in length in a range between 1/32 and 1½ inches.

The piloting mechanism is at the top of a rigid column mounted on a granite base plate measuring 24 by 18 inches. A motor drive assembly provides reciprocating movement to a horizontal ram which carries the tracer holder and is hinged to permit swinging the tracer upward. The holder is fitted with a collet at its bottom end to clamp the tracer in position. A graduated top collar provides for fine vertical adjustment.

Length of stroke is adjusted by a slideable sleeve and graduated plunger at the front of the housing. The piloting mechanism can be swung horizontally and clamped at any angle to permit the tracer to reach over the back or end of the base place to measure work that cannot be positioned on the instrument's base plate.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7202

You'd ask

"CAN YOU SEE TO WORK?"

—if he reported with a patch over one eye.

But what happens when one of your workers LOOKS normal, but SEES with only one eye? Many have this trouble.

Plant managers who are now checking, to make sure every employee's eyes are *working efficiently TOGETHER*, report 44% fewer accidents . . . 20% less spoilage . . . 45% lower training costs . . . increased production.

NO plant can afford workers with UNHAPPY EYES. Make a test of modern visual checking . . . no cost or obligation.

KEYSTONE VIEW CO., Meadville, Pa.

☐ Please arrange for demonstration of Occupational Visual Service.
☐ Send booklet "What your plant can Accomplish with Vision Screening."

NAME .....

COMPANY ..... CITY .....

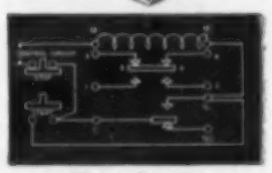
If you write maker identify as IEN - 7203

NEW!

AGASTAT

Trademark

TIME DELAY RELAYS with Remote Push Button Control



Wiring diagram
NEH-11 AGASTAT

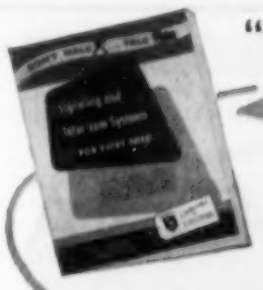
An auxiliary "hold-in" switch affixed to the bottom of these pneumatic relays makes possible a remote push button control of the time delay. Delays easily adjustable from 0.1 second to 10 or more minutes. A.C. and D.C. units, single or double break contacts. All are lightweight, compact, easily mounted and low in cost.

Write for specifications—and ask our application engineers for help with your timing problem. Address Dept. A9-62.

A'G'A DIVISION — ELASTIC STOP NUT CORPORATION OF AMERICA
1027 Newark Avenue, Elizabeth, New Jersey
Pioneers in pneumatic timing

If you write maker identify as IEN - 7204

"DON'T WALK...TALK"



NEW... Graybar Signaling Equipment Bulletin

Send for yours today — It's FREE

Working on plans to improve an existing signaling or plant intercommunication system . . . or perhaps there's an entirely new layout under discussion?

"Don't Walk . . . Talk" briefly describes various types of signaling equipment available, via Graybar, individually or as a part of a complete sound signal system. Webster Teletalk, Edwards Lokator, and Faraday clock systems . . . Federal horns and buzzers . . . and USI sound powered telephone systems—just a partial listing of what's featured in the bulletin. Send for your FREE copy today.

A Graybar Signaling Specialist can help specify equipment to fit any present system, or, he'll be glad to recommend a complete signaling installation to speed plant operations and save steps. *Graybar Electric Co., Inc., 420 Lexington Avenue, New York 17, N. Y.* 442-126

Call Graybar *first* for . . . Everything Electrical — GraybaR Electric Company

If you write maker identify as IEN - 7205

standardize on standard

HALLOWELL SOLID STEEL COLLARS

now size-marked for easy identification

42 stock sizes—each marked with shaft diameter for easy identification—are now available at your HALLOWELL distributors'. And these precision machined solid steel collars—in sizes from 3/16" to 3" inclusive—have the famous self-locking UNBRAKO Socket Set Screw to assure positive positioning on the shaft.

Write for literature and the name of your nearest HALLOWELL distributor. STANDARD PRESSED STEEL Co., Jenkintown 14, Pa.

HALLOWELL POWER TRANSMISSION DIVISION — SPS — JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 7206

New Low Prices on Equipto Iron-Grip* Shelving

"Custom" Quality Unchanged

Expanded plant facilities and advanced machinery and equipment now enable Equipto to reduce prices up to 20% on IRON-GRIP Steel Shelving.

And you get the same outstanding features that IRON-GRIP has always offered—60% faster shelf assembly and adjustment . . . exclusive steel studs eliminate nuts, bolts and tools . . . heavy gauge angled steel uprights . . . channel sided shelves that hold 600 lb load without reinforcement . . . independent construction that prevents moving units intact without disturbing assembly.

See for yourself! Visit your Equipto distributor today!

A slope in the keyhole joins with the taper on the stud to form the tightest and strongest of grips. An exclusive Equipto design.

*T.M. Equipto — Division of Aurora Equipment Co., 655 Prairie Ave., Aurora, Illinois. Steel Shelving . . . Parts Bins . . . Drawer Units

If you write maker identify as IEN - 7207

AETNA Announces

A HARDBOARD SERVICE that's NEW and DIFFERENT

3 TYPES
STANDARD
TEMPERED
PRESTPANEL

allwood* hardboard
SMOOTH • HARD • DURABLE

The Allwood line is the only hardboard line specifically designed to fit every application where economical, easy-to-use panels will save time and money. You have a choice of 3 TYPES: *Standard*—hard and smooth; *Tempered*—extra hard and abrasion and moisture resistant; *Prestpanel*—lightweight and smooth . . . plus Underlayment and Siding Panels.

Here is a product that is really profitable to use. Allwood is new, low cost, TOP QUALITY material, made of ALL wood genuine natural fibre. Wall paneling, ceilings, partitions, counter and table tops, cabinets, doors, panels and shelves are some of its many uses.

★ Allwood is super-strong, smooth, hard and tough.

★ Allwood has dimensional stability and may be worked with equal facility in any direction, because it has no grain.

★ Allwood is economical; extra large, easy-to-handle sheets save labor and installation costs.

AETNA—Exclusive Distributor in Midwest

*TM Oregon Lumber Co.

AETNA PLYWOOD & VENEER CO.
1724 N. Elston Avenue, Chicago 22, Illinois
ARmitage 6-7100

BRANCH WAREHOUSES: Detroit 9, Grand Rapids 7, Indianapolis 2, Peoria and Rockford.

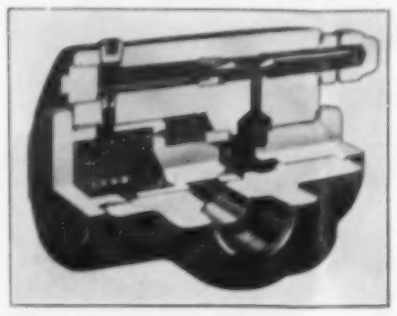
MAIL THIS COUPON TODAY

AETNA PLYWOOD & VENEER COMPANY
1724 N. Elston Avenue, Chicago 22, Illinois
Without obligation, please send me Allwood descriptive literature and prices.
NAME ..... POSITION .....
ORGANIZATION .....
ADDRESS .....
CITY ..... STATE .....

If you write maker identify as IEN - 7209

VALVE . . Hydraulic relief unit for pressure control to 2,000 pounds

Source: DENISON ENGINEERING CO.
1160 Dublin Road, Dept. IEN, Columbus 16, Ohio



Bulletin 152

Series M designates a new pressure relief valve that stands in normally closed position, with reference to its connection from a pressure line back to a hydraulic reservoir, and in open position continuously between its inlet at the rear and outlet at the front or, in reverse, with the inlet at the front and outlet at the rear to meet requirements.

Pressure flow through the valve also applies in the piston chamber, through a vent opening in the piston, to hold the valve in closed relief position until an adjustable spring backed pilot vent releases the holding pressure. At this point, the valve piston retracts against its light spring and permits flow back to the reservoir through the bottom relief line.

Three sizes are threaded for ½, ¾ and for 1¼ or 1½-in. pipe. Nominal rated capacity is 10, 20, 60 and 80 gpm. The ¾-in. unit measures about 6 in. in overall length by 3 in. between the front and rear inlet and outlet connections by 4 in. in height in the position in which it is shown in the illustration. Parts can be renewed without taking the valve from the line. Adjustment is made after removing an acorn nut from the end of the screw at the upper right hand corner of the assembly. A remote vent can be connected to the plugged opening at the opposite upper end for remote control.

If you write maker identify as IEN - 7210

CLEANING . . Portable vacuum machine to remove liquid and dirt from a sump

Source: SPENCER TURBINE CO.
485 New Park Ave., Dept. IEN, Hartford 6, Conn.

Bulletin 130-D

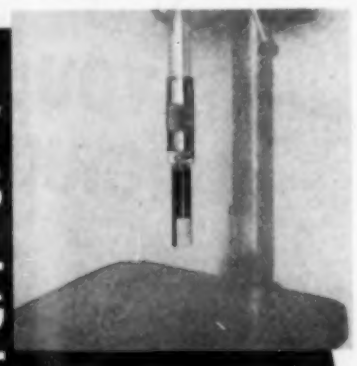
Tank capacity is 55 gal. in a new unit the company has added to its Sump-Vac line of portable vacuum cleaning machines. It is available with a 1 or 1½-hp. motor. Rate of pick up is 30 gpm. and, by turning valves provided for the purpose and connecting the hose to the drain valve, liquid can be discharged at approximately 3-lb. pressure.

No priming is required and all of the material in the sump tank is cleaned out by air vacuum after the liquid has been removed. A filter basket collects chips and heavy sludge. A neoprene float valve prevents over-filling. The tank can be emptied by gravity in about 2 minutes. The new machine supplements the company's 125-gal. model.

Overall dimensions are 43½ by 22 by 48½ inches. Suction rating at the machine, with the inlet blocked off, is 54.2 in. of water in the 1-hp. unit and 61.2 in. in the 1½-hp. machine. Weights are 430 and 450 lb. respectively. The universal motor can be supplied for 110 or 220-volt input. A 50-ft. rubber covered extension cord is standard equipment.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7211



MAKES ANY DRILL PRESS A VERTICAL HONING MACHINE

SUPERIOR MD-1 MANDREL DRIVER

Speedier, more accurate hole finishing and sizing at half the cost of grinding or lapping.
Ideal for die work, bushings and dowel pin holes. Keyways and slots quickly honed to .0001 accuracy.
Permanent-type mandrel sizes .185 to 3.000 standard. Snap in place. Stones slide in and are securely locked by a twist of the cap. Size adjustable by turning driver body. Available in No. 2, 3 or 4 Morse tapers.
Use coupon today to get free literature.

SUPERIOR HONE CORPORATION
1611 Elreno Street — Elkhart, Indiana

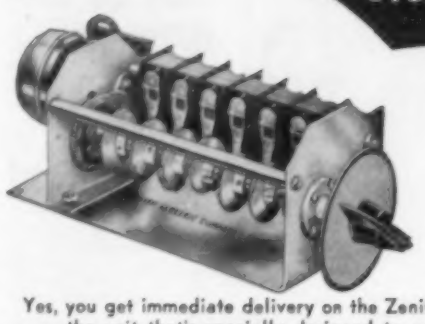
Please send free catalog on Superior Honing Machines.

NAME .....
FIRM .....
STREET .....
CITY & STATE .....
NAME OF SUPPLIER .....

If you write maker identify as IEN - 7212

NOW IS THE TIME

For Immediate Delivery.... The NEW ZENITH Multi-Circuit CYCLE TIMER



For ACCURATE TIME ON ALL YOUR ELECTRICAL OPERATIONS!

Yes, you get immediate delivery on the Zenith Multi-Circuit Timer . . . the unit that's specially designed to accurately, dependably time any operation. Thousands in use in hundreds of applications—for electrical display signs, industrial furnaces, electrical appliances, laundry equipment and dry cleaning equipment. The Multi-Circuit Cycle Timer and other Zenith units solve many laboratory timing problems. May be set for on and off periods with as many circuits as desired . . . can be furnished without synchronous motor for elevator control, limit switch and similar operations. Available now!

For full information and prices, send for illustrated Bulletin No. 142

See Classified Telephone Directory for Name of Local Representative.

ZENITH ELECTRIC CO.
146 W. WALTON STREET • CHICAGO 10, ILLINOIS

If you write maker identify as IEN - 7213

Now

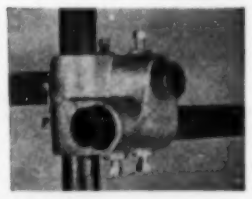
you can build your scaffold not only UP

but

OUT and OVER

for safe and easy access to meet all conditions with **AMIDON FITTINGS** and new or used one inch pipe.

Write for additional information



AMIDON ENGINEERING CO.
ELYRIA 14, OHIO

If you write maker identify as IEN - 7214

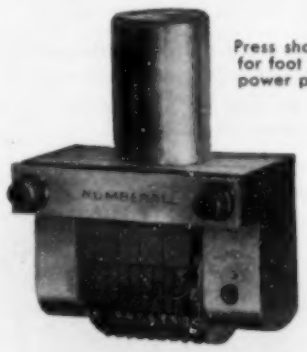
NUMBERALL — CUTS THE COST OF STAMPING NUMBERS

NEW MODEL 70

MULTI-WHEEL NUMBERING MACHINE

The most efficient method of stamping numbers into metal. Repeats the same numbers until changed. Model 70 NUMBERALL Machines are used in all industries to mark various parts. Stamps numbers, etc., quickly . . . neatly. Perfectly aligned. Much better marks are produced by these machines than by single stamps or steel type, and at a far lower cost. Shank for Hand or Press and with any number of wheels from 3 to 20.

Hand Shank



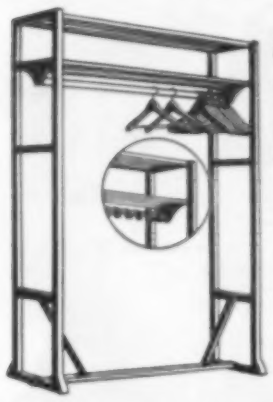
Press shank for foot or power presses

Write for Bulletin IEN-70

Can be furnished in 1/32" to ⅜" high figures, sharp face gothic or shaded roman style. Automatic Numbering Heads also can be supplied.

NUMBERALL STAMP & TOOL CO.
HUGUENOT PARK STATEN ISLAND 12, N. Y.

If you write maker identify as IEN - 7215



Checkerette® Portable Hat and Coat Racks

Placed near point of work, these efficient units hold wraps aired, dry and "in press" by day, and keep shop coats, or work clothes in compact orderly manner at night. Answer the wraps problem in the office, company cafeteria, in reception or meeting rooms. Set up anywhere in a few minutes without nuts, bolts, or tools. Store away like folding chair when not in use. 4 ft. single face unit accommodates 24 hangers. 4 ft. double faced takes 48. 3 ft. units proportional.

Rigid in use. Heavy gauge, welded box and U forms. Baked gray enamel finish.

Capacity can be doubled by using snap over coat hooks

Write for Bulletin CT5

VOGEL-PETERSON CO.
"The Coat Rack People"
1121 West 37th Street • CHICAGO 9, ILL.

If you write maker identify as IEN - 7216

NOW... a HIGH STRENGTH Steel Bar for All Your Repair Jobs

NEEDS NO HEAT TREATING

STRESSPROOF®
THE ALL-PURPOSE STEEL BAR

FASTER REPAIRS...CUTS INVENTORIES

Shafts, screws, spindles, and other parts can now be made in *much less time*, right *in your own plant*, with STRESSPROOF, the all-purpose, carbon-steel bar. No heat-treating equipment is required and no time is lost, because STRESSPROOF parts need no additional processing. All the qualities you want are right in the bar. STRESSPROOF has twice the strength of ordinary cold-finished shafting, better wearability than many heat-treated or alloy steels, and 50% better machinability than heat-treated alloys of the same hardness. Warpage in machining is minimized. STRESSPROOF is available in cold-drawn or close-accuracy, ground and polished, finish. Reduce your bar inventory by stocking this *one* bar for all shafting repairs.

STOCKED BY LEADING STEEL WAREHOUSES FROM COAST TO COAST

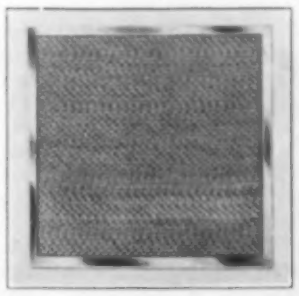
Write for LaSalle's helpful data bulletin on STRESSPROOF bars.

La Salle STEEL CO.
1410 - 150th Street, Hammond, Ind.

If you write maker identify as IEN - 7218

DUST COLLECTING . . Filter panel employs viscous coated wire mesh

Source: AIR FILTER CORP.
108 N. Water St., Dept. IEN, Milwaukee 2, Wis.



Bulletin W-801

New design, Type W, of the Viro-Crimp Airsan dust collector panel employs welding at the corners of the galvanized steel frame combined with hemmed edges of the filter element to present a smooth surface for safe handling. Corrugated strips of galvanized wire mesh are assembled in off-center arrangement so there is no direct passage for air through the panel. The air flows into divider channels where it is baffled by a filter wall.

Four nominal sizes are 16 by 20 in. to 20 by 25 inches. Standard thickness is 2 in. but 4 in. can be specified. The largest 2-in. panel rates 1,000 cfm. with face velocity at 300 fpm. and initial resistance at 0.07 in. of water. This capacity increases to 1,500 cfm. at 500 fpm. and 0.12 in. of water.

If you write maker identify as IEN - 7219

PLASTIC . . Epoxy type, copper clad, for application in printed circuits

Source: FORMICA COMPANY
4614 Spring Grove, Dept. IEN, Cincinnati 32, Ohio

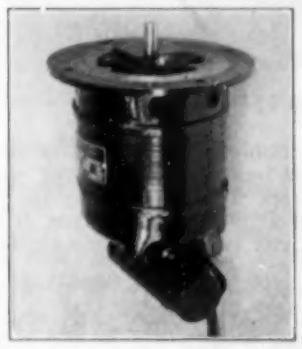
Technical data upon request

Formica FF-91 is a new laminated epoxy type plastic sheet copper clad on one or both sides. The sheet is available to 36 in. in width by 42 in. in length. Thickness ranges from 1/32 to 1/4 inch. The copper cladding can be 1, 2 or 3 ounce. The bond is perfect and permanent between the laminate and the copper. Electrical resistance is excellent. The inorganic base is not subject to fungus attack. Sharp etched circuits can be produced with the new sheet.

If you write maker identify as IEN - 7220

MOTOR . . Synchronous design rates 1/12 hp. on 110 volt 60 cycle ac.

Source: NATIONAL PNEUMATIC CO.
125 Amory St., Dept. IEN, Boston 19, Mass.



Built to order

Type RBH-5425 designates a new ball bearing flange mounted synchronous motor designed for vertical operation, shaft up, although it also can be employed in any other position. The housing measures about 5½ in. in diameter. The motor mounts a squirrel cage rotor. It does not employ brushes or slip rings. The company is prepared to supply a range of similar motors measuring 2½ to 7 in. in diameter.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7221

SAVE 50% and more in Labor - Material with FencPainteR

For WOOD - METAL BRICK - STONE CONCRETE

Hundreds of industries and institutions all over America are using the FencPainteR applicator system of painting at immense savings. It's five times faster than brushing methods. Irregular and corrugated surfaces painted with the same facility and covering power as smooth surfaces. One concern painted 6 ft. wire fence at a total cost of only 20c per lin. ft. FencPainteR enamels contain only top-notch ingredients — go much farther — are more economical in the long run.

SPECIAL TRIAL OFFER — Including industrial size FencPainteR and 5 gal. FencPainteR aluminum enamel, 1 gal. solvent. Complete, only $57.00. Enough to do 300 lin. ft. of 6 ft. chain link fence. (Add $5.00 for grey, white or black — $10.00 for red or green).

THE ONLY ROLLER MADE WITH CAPILLARY ATTRACTION (PAINT HOLDING POWER)

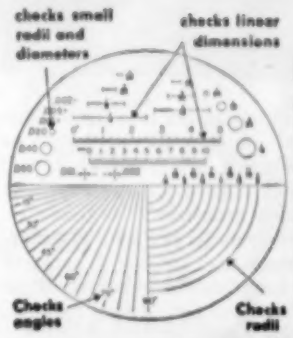
FencPainteR Corporation
2314 W. Van Buren Street Dept. IE Chicago 12, Ill.

MAIL COUPON for new 32 page illustrated brochure with full details covering FencPainteR products and their use.

FencPainteR Corp., 2314 W. Van Buren St. Dept. IE, Chicago 12, Ill.
☐ Please rush Free 32 page Brochure
☐ Send Special Trial Offer, complete
(Color desired _____) $ _____
Name _____
Address _____
City _____ State _____

If you write maker identify as IEN - 7222

THE Original BELL & HOWELL
Pocket Comparator



Saves time and money inspecting small dimensions

● Here's *guaranteed* accuracy in checking small dimensions at a price any business can easily afford. Save time and money measuring wear on cutting tools, checking forms and dimensions of punches, dies and gauges—as well as chamfers, threads and small holes on production parts.

Thousands in use by America's leading precision manufacturers. It's the greatest time-saver since the micrometer!

price only $36.00 order today

A product of BELL & HOWELL CO. Distributed by
See Your National Tool Co. Representative or Local Jobber
NATIONAL TOOL CO.
11220 Madison Avenue Cleveland 2, Ohio
Write for FREE descriptive folder

If you write maker identify as IEN - 7223

SEND FOR THIS NEW BULLETIN

Improved Method Centrifugal SPRAY DRYER and CONCENTRATOR*

CONTRACT DRYING
We invite inquiries for Contract Drying in our fully equipped, Stainless Steel Plant in Chicago. Shipments can be made direct to our Railroad Switch Track or Truck Docks.

THE DRYING AND CONCENTRATING COMPANY DRYER

Improved method for **DEHYDRATING**

Solutions, emulsions and materials which can be handled in a liquid form including:
Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

This complete spray drying plant employs a unique Centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooling Fans and Sanitary Pumps with variable speed drives for handling liquid material and controlling the moisture.

*CONCENTRATOR AVAILABLE SEPARATELY

The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining natural flavors and vitamins.

Write for New FREE Bulletin 205R

DRYING and CONCENTRATING CO.
337 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

If you write maker identify as IEN - 7224

UNBRAKO® self-locking CUP POINT

The point that won't work loose

Unique, counterclockwise knurls on the cup point make these UNBRAKO Socket Set Screws self lockers, prevent them from loosening. UNBRAKO Self-Locking Set Screws stay tight even in poorly tapped holes, reduce maintenance costs and cut production losses. Standard sizes—#4 to 1" in a full range of lengths—are available for prompt delivery from your UNBRAKO industrial distributor. Write for UNBRAKO Standards. STANDARD PRESSED STEEL CO., Jenkintown 14, Pa.

UNBRAKO SOCKET SCREW DIVISION **SPS**
JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 7225

universally acclaimed! the *New* CP universal electric impact wrench

Here's a wrench that can get into tight spots! It's the speedy ⅜" capacity CP-903R with its bonus capacity rating of ⅝"... develops 2,000 blows per minute. Designed for awkward spot jobs, its nose section measures 2" in diameter. Snap switch on the handle prevents reversing while wrench is running... handle is centered at balance point for effortless handling. Write *Chicago Pneumatic Tool Co., 8 East 44th St., New York 17, New York.*

Chicago Pneumatic

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

If you write maker identify as IEN - 7226

It's automatic!

SEALS CARTONS FASTER

...reduces packer fatigue

New NATIONAL "88" ELECTRIC TAY-PER®

- Foot operated — both hands free for carton handling.
- Tape-Mizer permits unlimited selection of tape lengths from 6" to 70".
- Cuts accurate lengths. No wasted tape!
- Thorough and uniform all-over moistening of gummed surface.
- Pays for itself quickly in tape, time and labor saved.

itstix®

PRINTED TAPE

Designed for use with the National "88" Electric Tay-Per. Welds itself to the carton, preventing product damage. Itstix Printed Tape seals against pilferage since packages cannot be retaped without detection. Gives your product positive identification as well as effective advertising.

FREE 10-day Trial OFFER

Try this modern package sealing machine in your shipping room for 10 days without cost or obligation. See how much time, labor, and money you save when your tape dispenser and gummed sealing tape are designed to *work together.*

NASHUA PACKAGE SEALING
NASHUA
DIVISION OF NASHUA CORPORATION
Dept. P-3, 84 Franklin Street, Nashua, N. H.

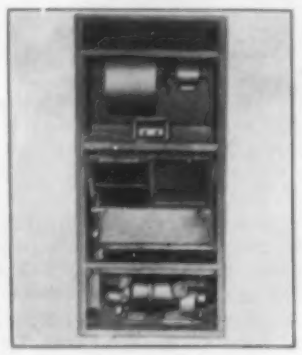
Without obligation, please have a representative call and install a National "88" Electric Tay-Per for a FREE 10-day trial.

Name _____ Title _____
Firm _____
Street _____
City & State _____

If you write maker identify as IEN - 7228

AIR CONDITIONING .. Space unit cleans, cools, circulates air, can heat

Source: WORTHINGTON CORPORATION
423 Worthington Ave., Dept. IEN, Harrison, N. J.



Catalog C-1100-B49

Air intake to this new packaged air conditioner is through a grill at about the center of the housing. The air turns upward inside the housing to pass through a filter and a heating coil for movement to a motor driven blower. The blower delivers to a top plenum chamber fitted with a grill and adjustable discharge louvers. A refrigerant compressor and condenser are mounted in the bottom compartment of the housing.

The condenser can be condenser to water circulated from a cooling tower or to a city line. The compressor is on a floating mount. It and its motor are permanently lubricated and hermetically sealed. The motor that is belt connected to the blower is a ball bearing unit, also factory lubricated and sealed.

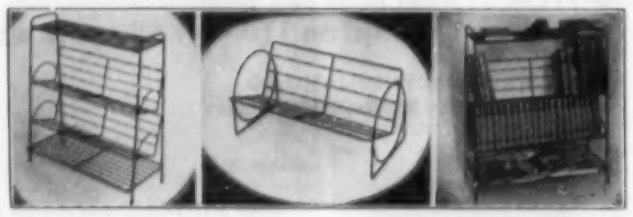
Five sizes in the line rate 1,200 to 6,000 cfm. and from 3 to 15½ ton of refrigeration. The smallest unit is equipped with a 3-hp. motor compressor unit. The largest employs two 7½-hp. units. The blower motor rates ½ to 2 hp. Overall dimensions of the smallest unit are about 37 by 21 by 83 inches. The largest one measures about 82 by 31 by 99 inches.

Features in the construction include a new cabinet with semi-gloss baked enamel finish and an enameled name plate. Reset control is located back of this name plate which can be pushed out of the way on its spring mounting. The compressor is a new design by the company for ultra-quiet operation and low maintenance. The cooling coil is finned with aluminum and also is faced with aluminum between the fins. Its three row design cools the air efficiently and permits separated moisture to drop freely to the drain pan.

If you write maker identify as IEN - 7229

STORING .. Wrought iron racks, floor and desk designs for books

Source: STRAITS STEEL & WIRE CO.
902 N. Rowe St., Dept. IEN, Ludington, Mich.



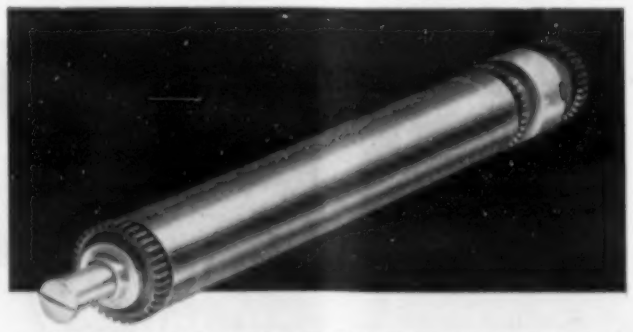
About $10 and $3.50 each

Simple, sturdy construction employs weld assembly and black finish with rubber tipped legs in both the floor and desk designs of this new book rack. The former measures 27 in. in width by 32 in. in height and weighs 18 pounds. It is equipped with flat top and bottom shelves and two slanted intermediate shelves.

The desk design measures 18½ in. in width by 9 in. in height. It is packed two to a carton as compared to the single one for the larger unit. Shipping weights are 10 and 3 lb. respectively. Both are for use in main and plant offices.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7230



OUT OF AN IBM BUSINESS MACHINE POPS THIS TUBING IDEA FOR YOU

This is the contact roll of an IBM Collator—which performs electronic sleight-of-hand with 240 punched cards per minute! Steel fingers that sort the cards give the roll a high-speed workout. And it must resist corrosion and be a good electrical conductor. IBM employs Superior WELDRAWN* Beryllium Copper and low carbon steel composite tubing for the roll because it meets tight specifications for wear resistance, peak hardness and conductivity. Chances are this tubing—or one of our more than 55 other analyses—will meet *your* requirements for equally critical applications. Send for free Technical Bulletin #7-2 and tell us about your tubing needs.

*Reg. U.S. Pat. Off.

All analyses .010" to ⅝" O.D.
Certain analyses in light walls up to 2½" O.D.

SUPERIOR TUBE COMPANY
2016 Germantown Ave., Norristown, Pa.

Superior Tube
THE BIG NAME IN SMALL TUBING

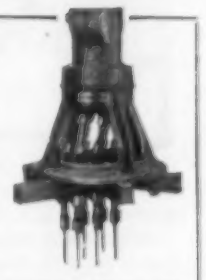
If you write maker identify as IEN - 7231

ONLY THRIFTMASTER *Universal Joint Type* DRILL HEADS have these exclusive* features

6 Standard Models
Models U-608 and U-1000—Ball Bearing
Models U-6208 and U-1012B—Plain Bearings, 11/16" or ½" min. centers.
Models U-608-BS and U-1000-BS—Ball Bearing Gear Case, Plain Spindles

Semi-Standard Heavy Duty Full Ball Bearing
½" in Cast Iron—1-7/16" min. centers 7⅛" or 9⅜" dia.
½" in Steel—1 13/16" min. centers 7" or 9⅝" Dia.
Also Larger Adaptations and Full Line of Fixed Center Drill Heads.

• Standard Full Ball Bearing Construction, including Spindles.
Driving assembly is *Full Ball Bearing* mounted with 3 Bearings on each spindle. Thrust load carried by radial thrust bearings.



• Standard Slip-On and Slip-Off Template Construction
For accurate setting and locating spindle brackets are machined to receive slip-on and slip-off template.

WRITE FOR FULL INFORMATION

THRIFTMASTER *Products Corporation*
Subsidiary of Thomson Industries, Inc.
1040 N. Plum Street, Lancaster, Penna.

Also Makers of
DORMAN AUTOMATIC REVERSE TAPPERS

If you write maker identify as IEN - 7232

Summer or Winter... WING REVOLVING UNIT HEATERS Bring Comfort to Your Employees...

The slowly revolving outlets of the Wing Revolving Unit Heaters keep the air in constant, gentle motion, during any season of the year. The effect on the worker is stimulating and pleasant. Plants equipped with Wing Revolving Unit Heaters are satisfied productive ones. Why not investigate today?

The moving streams of heated or cooled air slowly circulate. The velocity and constantly changing direction of flow cause the air to find its way to any given point.

L. J. Wing Mfg. Co. 160 Vreeland Mills Rd., Linden, N.J.

If you write maker identify as IEN - 7233

STREAMLINED AND RUGGED

BRAND NEW

Cast Iron Housing

Black Wrinkle Finish

Sponge Rubber Skid Pad

LINEMASTER CLIPPER FOOT SWITCH

The streamlined Clipper Switch matches your unit's most modern features! Complete with all the rugged features of a heavy industrial switch. It is easily operated from sitting or standing position giving the worker a free hand for greater efficiency. Nearly 100% dustproof and yet accessible to wiring—just two screws to remove to reach interior mechanism.

Size—4½" x 3½" x 1½" • Weight 2 lbs.

LINEMASTER SWITCH CORP.
426 Woodstock Terrace • Woodstock, Conn.

WRITE FOR BULLETIN AND PRICES

Let us quote on your switch requirements

If you write maker identify as IEN - 7234

SOMETHING NEW IN HYDRAULICS

DENISON low-priced 2000 psi Series M Relief Valves

NOW . . . a wider range of pressure regulation than found in any other relief valve used in 2000 psi circuits today.

GET FACTS. New Free Bulletin No. 152 gives operating characteristics, capacities, sizes and dimensions for new line of Denison Series M Relief Valves. Write for it today.

THE DENISON ENGINEERING COMPANY
1150 DUBLIN ROAD • COLUMBUS 16, OHIO
LEADING DESIGNER AND MANUFACTURER OF HYDRAULIC PRESSES AND COMPONENTS

If you write maker identify as IEN - 7235

Are You Looking For A Valve to Stand Services Like These ?

Then Write to

ROCKWELL!

Take a quick look at these services:

ACETIC ACID	LINSEED OIL
ALCOHOL	LYE
AMMONIA	NAPHTHALENE
BEER	PHENOL
BUTANE	SODIUM CHLORIDE
CARBON DIOXIDE	STYRENE
FREON	SULPHURIC ACID
GAS	TAR
GLYCERINE	VEGETABLE OILS
LACQUER	WATER

These and dozens of other industrial services are readily controlled by Rockwell-Nordstrom lubricant-sealed valves. These valves use lubricant, not only for easier turning and longer life free from abrasion, but also as a leak-proof seal. Write for catalog with service recommendations. All sizes, for any piping arrangement, iron, steel and corrosion-resistant alloys.

ROCKWELL MANUFACTURING COMPANY 5431F
Pittsburgh 8, Pa.
Please send me Rockwell-Nordstrom Valve Catalog V-217
Name_____ Title_____
Company_____
Street_____
City_____ Zone____ State_____

Canadian Licensee: Peacock Brothers Limited

If you write maker identify as IEN - 7237

DRIVE . . Variable speed unit for maximum speeds at 10 to 550 rpm

Source: GRAHAM TRANSMISSIONS INC.
Dept. IEN, Menomonee Falls, Wis.

For low speed operations

New reducer, worm and gear design, is now available as standard equipment on the company's infinitely variable speed transmission in the ⅙ and ¼-hp. sizes. The reducer can be furnished with the output shaft extending to both sides, or above and below, or with a single extension. Five ratios, between the bronze worm gear and the alloy steel hardened and ground worm, are between 5 and 60 to 1 The worm and gear shafts are mounted on ball bearings designed to take thrust and over-hung loads.

The ball bearings replace sleeve bearings employed in a previous design. Spring loaded oil seals replace felt seals. Center distance between the shafts has been increased by 60 per cent over the previous design. Efficiency has been increased by 16 per cent in the higher ratios.

The drive itself is the company's standard stepless construction in which a ring is adjusted axially on a cone to change the ratio between input and output speed. Ring position is controlled by turning a crank as shown in the illustration in the standard design. Other local and remote controls are available together with a choice of built-in motors of various electrical characteristics.

If you write maker identify as IEN - 7238

TUMBLING . . Motor driven barrel to finish small and medium work lots

Source: ALMCO SUPERSHEEN
Dept. IEN, Albert Lea, Minn.

Supersheen unit

Finishing operations, to include cleaning, deburring, descaling, grinding, polishing, can be performed on small and medium size work in this new Model DB-50 machine. Overall it measures about 44½ by 32 by 69 inches. It mounts a barrel measuring 24 in. in length by 22 in. octagonal in shape. Total barrel capacity is 5.6 cubic feet. The maximum recommended load, including parts and operating materials, is 800 pounds.

Barrel speed is variable between 10 and 30 rpm. through the stepless variable speed drive from the ¾-hp. drip proof motor. Operation is on 220 or 440-volt ac. as specified. The barrel can be supplied plain or neoprene lined. A hoist pan, to assist in loading and unloading, also is available.

A feature in the construction is the roll down screened cover that protects the barrel while it is in operation and prevents an operator from accidentally coming in contact with it. A chain guard is mounted over the driving sprocket on the variable speed transmission.

All Makers of These and All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 7239

PREVENT BURNS!

SWIVELIER *Adjustable*
COOLITES
STAY COOL
Using 100-Watt Lamp

"NEVER GETS TOO HOT TO HANDLE"

"Stays Put . . . At Any Angle!"

LOCKED-IN SPRING-TENSION PREVENTS DROPPING DOWN OR WORKING LOOSE.

EXTRA FEATURE! Easily removable switch cuts maintenance costs.

FOR USE ON:
- lathes
- millers
- drill presses
- other machine tools
- assembly benches
- inspection tables
- desks
- drafting boards
- business machines

• ALL WIRES ENCLOSED

UNIVERSALLY ADJUSTABLE

• For full details on Coolites, fluorescent and incandescent "Dextra-Lites" and other fine Swivelier Industrial Lighting Units

Write: Dept. IE-6 for Bulletin 134.

SWIVELIER COMPANY, Inc.
43—34th St., Brooklyn 32, N. Y.
Showroom: 30 Irving Place, New York, N. Y.

If you write maker identify as IEN - 7240

2,647,680 LBS.
SPEED PATCH
PURCHASED BY FIVE CUSTOMERS

ONE CUSTOMER HAS PURCHASED 1,277,171 POUNDS

FOUR ADDITIONAL CUSTOMERS HAVE PURCHASED A TOTAL OF 1,370,509 POUNDS

Proved THE WORLD'S FINEST, FASTEST FLOOR FIXER
ORDER TODAY!

READY MIXED • NO WAITING • TRUCK OVER EACH PATCH AT ONCE
ORDER TODAY!

ROCK-TRED Corporation
Manufacturers of a Complete Line of Building Maintenance Materials
7440-7450 North St. Louis Avenue • Skokie, Illinois
In Canada: Rock-Tred Corporation (Canada) Limited, Toronto 5

If you write maker identify as IEN - 7241

Chicago MOUNTED Wheels

...now even better with **79E BOND**

Buy Chicago Mounted Wheels—bonded with 79E Bond—and you'll never use any other!

79E—a tough new bond exclusive with Chicago Wheel—is the sensation of the industry . . . it does a BETTER grinding, burring, and finishing job FASTER. A size and shape for every use. Deliveries are excellent—Order today.

CHICAGO WHEEL & *Mfg. Co.*
Dept. N • 1101 West Monroe Street, Chicago 7

If you write maker identify as IEN - 7242

they're SELF-LOCKING

IN ANY POSITION

on a threaded member

FLEXLOCS stay put in any position on a bolt or stud the moment the locking threads are fully engaged; they do not have to be seated. And FLEXLOCS stay tight, no matter how severe the vibration; are one piece, all metal; can be used repeatedly. One nut covers a temperature range up to 550°F. Call upon your local industrial distributor for literature and samples or write STANDARD PRESSED STEEL Co., Jenkintown 14, Pa.

FLEXLOC LOCKNUT DIVISION

SPS
JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN-7243

TRY IT!

MAIL COUPON!

THIS TOUGH CONCRETE PATCH

SETS INSTANTLY!

Repair broken factory floors without the usual traffic tie-up. Simply shovel INSTANT-USE into hole or rut—tamp smooth—truck over! No waiting! INSTANT-USE bonds tight to old concrete—right up to a feather edge. It's tough. Wears like iron. Won't crack or crumble. Install complete overlay where floors are badly chewed up. Used indoors or out. Immediate shipment.

MAIL COUPON for TRIAL OFFER and FREE HANDBOOK

INSTANT-USE

FLEXROCK COMPANY (Offices in principal cities)
3606-Z Filbert St., Philadelphia 1, Pa.

Please send me complete INSTANT-USE information, details of TRIAL ORDER PLAN and HAND BOOK OF BUILDING MAINTENANCE — no obligation. (Clip and attach Coupon to Company letterhead).

Name .....
Title .....
Company .....
Address .....

If you write maker identify as IEN-7244

worth looking into...

NOW . . . a complete new catalog on TUTHILL STRIPPED PUMPS for Built-in Applications

As a practical help to manufacturers who want to reduce cost, save space, and improve product appearance, Tuthill now offers Catalog No. 106 on Stripped Pumps for built-in applications.

These dependable pumps are furnished in a wide range of types and sizes for lubrication, hydraulic, coolant and liquid transfer service...in capacities from ⅓ to 200 g.p.m. and pressures to 200 p.s.i.

Write for your copy of Catalog No. 106 today.

TUTHILL PUMP COMPANY

Dependable Rotary Pumps since 1927

939 East 95th Street, Chicago 19, Illinois

Canadian Affiliate: Ingersoll Machine & Tool Co., Ltd. Ingersoll, Ontario, Canada

If you write maker identify as IEN-7245

Cut Grease and Labor Costs

Kent's new K-22 heavy-duty floor machine has the rugged capacity to cover a 22-inch width of floor section with every sweep of the machine. Heavy grease accumulations can be *dry-scrubbed* with a special multiple brush. Unit can also be used for wet scrubbing.

Kent's famous Offset Motor Design permits faster and better work . . . causes less fatigue . . . and cuts maintenance costs.

KENT

PIONEER IN MAINTENANCE EQUIPMENT SINCE 1913

KENT CO., INC., 437 Canal St., Rome, N. Y.

Send immediately complete literature on Kent Floor Machines; also information on Industrial Vacuum Cleaners.

Firm Name .....
My Name .....
Address .....
City ..... State .....

JUNE 1954

INDEX TO ADVERTISERS

A
A'G'A Division of Elastics Stop Nut Corp. of America 113
Abart Gear & Machine Co. 76
Acme Electric Corp. 33
Acme Industrial Company 80, 98
Acme Steel Company 83
Acra Electric Corporation 30
Acromark Company 107
Acushnet Process Company 72
Adams, R. P., Co. Inc. 3, 4
Aetna Ball & Roller Bearing Co. 44
Aetna Plywood & Veneer Co. 114
Agat Detroit Company 14
Aircraft-Marine Products Inc. 40
Air-Hydraulics, Inc. 106
Air-Mite 65
Air Placement Equipment Co. 50
Air Reduction Co. Inc. 33, 94
Ajax Engineering Corp. 20
Ajax Flexible Coupling Co. Inc. 78
Ajusto Equipment Company 58
Akro-Mils Inc. 4
Alan Wood Steel Company 59
Allen, Alva F. 27
Allen-Bradley Co. 12
Allied Metal Specialties Inc. 112
Allied Products Corp. 78
Allis-Chalmers Mfg. Co. 5, 93
Almco 87
Aluminum Co. of America 56
Aluminum Ladder Company 75
Alvey-Ferguson Company 120
American Air Filter Co. Inc. 65
American Chain & Cable 53
American Cleaning Equip. Corp. 62
American Cystoscope Makers Inc. 32
American Gilsonite Company 66
American Machine & Foundry Co. 43
American Metal Products Co. 85
American Monorail Company 6
American Platinum Works 59
American Pulley Company 71
American Society for Metals 3
American Welding & Mfg. Co. 48
Ames, B.C., Co. 98
Ames Iron Works 34
Amidon Engineering Company 114
Ampco Metal Inc. 11
Anaconda Wire & Cable Co. 3, 13
Anderson, V. D., Company 34
Angle Steel Inc. 104
Apco Mossberg Co. 44
Appleton Electric Company 41
Arcos Corporation 52
Armco Drainage & Metal Products, Inc. 73
Armour & Company 41
Armstrong-Blum Mfg. Co. 64
Aro Equipment Corp. 97
Arrow Products, Inc. 40
Artos Engineering Co. 49
Askania Regulator Company 66
Associated Metal Fabricators 44
Associated Research Inc. 105
Atkomatic Valve Co. 36
Atlantic Abrasive Corporation 46
Atlas Industrial Corporation 59
Atlas Valve Company 112
Aurand Mfg. & Equipment Co. 95
Aurora Pump Co. 18
Automatic Transportation 88
Automotive & Aircraft Div. 53
Avery Adhesive Label Corp. 16
Ayerst Laboratories 83

B
Babcock & Wilcox Company Boiler Division 71
Babcock & Wilcox Co. Refractories Division 63
Babcock & Wilcox Co. Tubular Products Div. 55
Bacharach Industrial Instrument Company 88
Baker-Raulang Company, The 60
Ballymore Company 28
Barco Mfg. Co. 70
Barksdale Valves 64
Barnes and Smith Corporation 90
Bay West Paper Company 52
Bead Chain Manufacturing Co. 113
Behr-Manning Corp. 88
Bellows Company 31
Benjamin Electric Mfg. Co. 106
Berkeley Division, Beckman Instruments Inc. 50
Big Joe Manufacturing Co. 40
Binks Mfg. Co. 24
Blackburn, Jasper, Corp. 111
Black & Decker Mfg. Co. 120
Bliss, E. W., Company 100
Bowser Inc. 97
Bond Foundry & Machine Co. 37
Borden Metal Products Company 72
Borroughs Mfg Co. 95
Boston Gear Works 20, 81
Bostitch 43
Brady, W. H. Company 118
Brainard Steel Division 40
Breeze Corporations Inc. 77
Breuer Elec. Mfg. Co. 79
Bridgeport Fabrics Inc. 55
Bristol Co. 46, 107
Brookville Mfg. Co. 80
Brown Engineering Company 21
Brown, W. R., Corp. 16
Browning Manufacturing Co. 3
Brush Electronics Company 66
Bryant Chucking Grinder Co. 111
Buck Tool Company 87
Buda Company 77
Buell Engineering Company 7
Buffalo Pumps, Inc. 81
Burgess-Manning Co. 56
Buschman, E. W., Co. 73
Bussmann Mfg. Co. 17
Bustin Firm Grip Grating Corp. 57
By-Products Steel Company, Division Lukens Steel Co. 92
Byron Jackson Company 56

C
Cabot, Samuel, Inc. 61
Calculagraph Co. 26
Caldwell Company 119
Cameron Machine Co. 92
Camloc Fastener Corporation 32
Cannon Elec. Co. 20
Capco 64
Carboloy, Dept. of General Electric Co. 9
Carborundum Company 30
Card, D. R., Company 101
Carpenter Steel Co. 6, 69
Catawissa Valve & Fittings Co. 118
Celcote Company, The 11
Cellusuede Products Inc. 9
Century Electric Company 60
Cerro de Pasco Corporation 22
Chain Belt Company 7
Chester Hoist Division, The National Screw & Mfg. Co. 77
Chicago Bridge & Iron Co. 13
Chicago Eye Shield Co. 14
Chicago Float Works 89
Chicago Mfg. & Distributing Co. 14
Chicago Pneumatic Tool Co. 116
Chicago Rivet & Machine Co. 12
Chicago Wheel & Mfg. Co. 117
Cincinnati Gilbert Machine Tool Co. 31
Clair Mfg. Co. Inc. 46
Clark Bros. Bolt Company 51
Clarkson Incorporated 78
Clements Mfg. Co. 69
Cleveland Crane & Engr. Co. 47, 89
Cleveland Tramrail Div. 47, 89
Cleveland Virbrator Co. 22
Climax Molybdenum Company 4
Cling-Surface Co. 58
Coated Coil Corp. 92
Coffing Hoist Co. 91
Colorado Fuel & Iron Corp. 19, 24, 29, 79
Columbus McKinnon Chain Corp. 67
Comar Electric Company 86
Combustion Control orporation 48
Commander Mfg. Co. 103
Cone-Drive Gears Div., Michigan Tool Company 63
Conrad, Inc. 22
Continental Steel Corp. 52
Continental Tool Works Div. of Ex-Cell-O Corp. 31
Control Cells Corporation 48
Coppus Engineering Corp. 64
Cords Ltd., Div. of Essex Wire Corporation 67
Counter & Control Corporation 45
Cover, H. S. 27
Coxhead, Ralph C., Corp. 98
Crane Co. 4
Crane Packing Company Lapmaster Div. 10
Crane Packing Co. 111
Cro-Plate Company Inc. 38
Crozier Machine Tool Co. 29
Cunningham, M. E., Co. 5
Curran Corporation 93
Curtis Development & Mfg. Co. 27
Curtis Pneumatic Machinery Div. of Curtis Mfg. Co. 33
Cyclone Fence Division 49

D
Danly Machine Specialties, Inc. 42
Darnell Corp. Ltd. 38
Dart Union Company 32
Davenport, A. C., & Son Inc. 80
Day Company, The 82
De Bothezat Fans Div. American Machine & Metals, Inc 120
Defiance Machine and Tool Co. 38
Delpark Corp 85
Deluxe Metal Furniture Co 76
Deming Company 44
Denison Engr. Co. 7, 117
Derby Sealers Inc. 14
Despatch Oven Co. 62
Detex Watchclock Corporation 79
DeVilbiss Company 57
De Walt Inc 43
DeZurik Shower Company 89
Dickerman, H. E., Mfg. Co. 58
Dico Company 10
Dillon, W. C. & Co. Inc. 16
Dodge Mfg. Corp. 53
Dolge, C. B., Co. 104
Dollin Corp. 10
Doyle Vacuum Cleaner Co. ....[illegible]
Dravo Corporation 93
Drying & Concentrating Co. 15
Duff-Norton Mfg. Co. 7
Du-Lite Chemical Corporation 37
du Mont Corp 28
Dunham, C. A., Co. 61
Du Pont, E. I., De Nemours & Co. 15
Durabla Manufacturing Co. 58
Durable Rubber Products Co. 102
Dustex Corporation 50

E
Eastman Kodak Co. 41, 89, 101
Easton Car & Construction Co. 23
Economy Engineering Co. 100
Edlund Machinery Company 46
Elastic Stop Nut Corp. of America 20
Electric Auto-Lite Company 106
Electroline Co. 59
Electro-Mechano Company 9
Electro-Snap Switch and Mfg. Co. 75
Elgin National Watch Co. Abrasives Division 47
Elliott Company 40
Elox Corporation of Michigan 50
Emerson Electric Mfg. Co. 51
Engelberg Huller Company, Inc. 24
Enterprise Machine Parts Corp. 13
Equipto Division of Aurora Equipment Company 21, 114
Erico Products Inc. 84
Erlex Manufacturing Company 42
Evans & Company 107
Executone Inc. 96
Exide Industrial Division, Electric Storage Battery Co. 84

F
Faber-Castell, A. W., Pencil Company Inc. 3
Fairbanks Company 90
Fairfield Manufacturing Co. 88
Farrelloy Company 120
Fastener Corporation 99
Faultless Caster Corporation 55
Fawick Airflex Division Federal Fawick Corp. 60
Federal Sign and Signal Corp. 98
Feedrail Corporation 37
Felters Company 12
FencPainteR Corporation 115
Ferro Corporation 54
Field Engineering Company 76
Finnell System Inc. 22
Fisher Governor Co. 109
Fisher Scientific 36
Flash Box Opener Co. Inc. 5
Flexaust Company, The 32
Flexonics Corporation 10
Flexrock Company 118
Flightex Fabrics Inc. 44
Flood Company 108
Foote Bros. Gear & Machine Corp. 69
Force, Wm. A., & Co. Inc. 63
Fort Worth Steel & Machinery Co. 34
Foster, L. B., Co. 12
Foxboro Co. 120
Fresse, Peter A., & Co. Inc. 19
Fries Instrument Div. of Bendix Aviation Corp. 76
Fulflo Specialties Co. Inc. 18
Fulton Sylphon Div. Robertshaw-Fulton Controls Co. 61

G
G-M Laboratories Inc. 51
Garlock Packing Co. 20
Gast Mfg. Corp. 20
Gates Engineering Company 104
Gear Grinding Machine Co. 62
General Box Co. 30
General Control Company 86
General Electric Co. 55
General Motors Corp. 2
General Plate Div. of Metals & Controls Corp. 35
General Radio Co. 82
General Tire & Rubber Co. 86, 99
Gerotor May Corp. 87
Gerrard Steel Strapping Division 57
Gits Bros. Mfg. Co. 103
Globe Industries, Inc. 54
Goodrich, B. F., Co. 100
Goodyear Tire & Rubber Co. 93
Gottscho, Adolph, Inc. 24
Goulds Pumps Inc. 24
Graef Engineering Company 98
Graham Transmissions Inc. 21
Graphic Systems 94
Gravely Tractors, Inc. 25
Graybar Electric Co. Inc. 29, 113
Gray Company Inc. 102
Gries Reproducer Corp. 113
Grinding & Polishing Machinery Corp. 16
Guardian Electric 101

H
Haloid Company 69
Hamilton Tool Co. 29, 31, 33
Handy & Harman 2
Hankison Corp. 51
Hannifin Corp. 91
Hansen, A. L., Mfg. Co. 97
Hansen Mfg. Co., The 44
Hardinge Brothers, Inc. 46
Hardinge Co. Inc. 28
Harper, H. M., Co. 103
Harrington & King Perforating Co. 70
Hassall, John, Inc. 67
Hazard Insulated Wire Works, Div. The Okonite Company 78
Heinemann Electric Company 69
Heinrich Tools, Inc. 22
Highside Chemicals Company ....[illegible]
Hobbs Mfg. Co. 91
Homestead Valve Mfg. Co. 28
Honan-Crane Corp. 35
Hood Rubber Company 58
Hoosier Fence Company, Inc. 102
Houdaille-Hershey Corp. 35
Houghton, E. F., & Co. 97
Huot Mfg. Co. 91
Huppert, K. H., Company 110
Hydroway Scales Inc. 106
Hypro Engineering Inc. 93

I
Ideal Industries, Inc. 9
Illinois Engineering Co. Div. of American Air Filter Co. 35
Illinois Glove Company 97
Illinois Testing Laboratories, Inc. 80, 90
Imperial Brass Manufacturing Co. 108
Inde.. Machine Company 44
Industrial Brownhoist Corp. 103
Industrial Crane & Hoist Corp. 50
Industrial Filtration Company 85
Industrial Products Company 3
Industrial Tectonics, Inc. 60
Ingersoll-Rand Company 18
International Development Co. 75
Ironbound Box & Lumber Co. 75
Irvington Varnish & Insulator Co. 34
Island Equipment Corporation 78

J
Jaco Devices, Inc. 48
Jaeger Machine Company, The 54
James, D. O., Gear Mfg. Co. 75
Jari Products Inc. 76
Jeffrey Manufacturing Co. 18
Jenkins Brothers 38, 80
Johns-Manville 73
Johnson Corporation 10
Johnson, E. F., Company 86
Johnson Manufacturing Corp. 54
Jones, Howard B., Div., Cinch Mfg. Corp. 96
W. A. Jones Foundry and Machine Company 74
Joy Manufacturing Company 38, 80

PLEASE WATCH FOR YOURS

Certain copies of this publication for the next few months will carry a post card on the front page. It is intended for your use to make sure you still want to remain on our mailing list. Please watch for the one with your name on it.

OK or correct your name and address as they appear on the card. Please also check the questions asked. They are simple, self-explanatory, essential to our circulation audit.

If you write maker identify as IEN-7246

FASTER, LOWER COST, BETTER Pipe Identification with

Brady Pressure-Sensitive Markers

You also get NEW BLUE STREAK RELEASE COATING

Positively eliminates tugging, twisting, tearing, distortion. Markers come right off the card for fastest peel to apply time ever!

It's more efficient, safer, thriftier to mark *what* flows *where*—with Brady Pressure-Sensitive Pipe Markers. Off dispenser card in a hurry—on the pipe to *stay* and be *seen* . . . for real savings in material cost and application time. *Background color and legend-overprint combinations meet A.S.A. Standard A-13.* And Brady Markers are Silicone-coated to stay clean, highly visible. A wide assortment of standard markers—or we'll make any kind, with any legend, to your exact order! For *free* samples, useful literature, write—

W. H. BRADY COMPANY

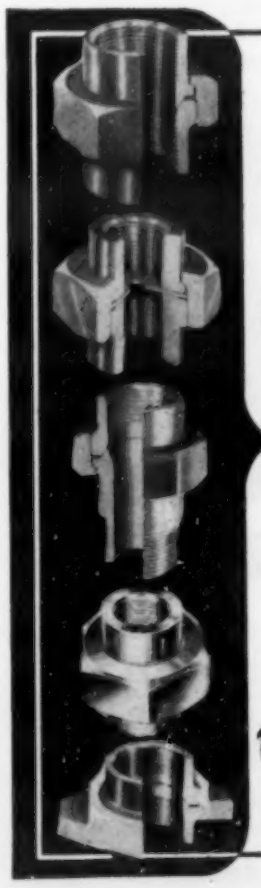
734 W. Glendale Ave., Milwaukee 12, Wis.

BRADY

NO. 1 NAME • NO. 1 SOURCE

Pressure-Sensitive Industrial Products

If you write maker identify as IEN-7247



A TYPE FOR EVERY USE!

Catawissa PERFECT SEAL Unions

for all temperatures for all pressures!

Catawissa Unions are HOT FORGED from solid rectangular steel bars to give sure-fire piping dependability! Exclusive Ball-to-Angle seat design gives A PERFECT SEAL EVEN WITH PIPE NOT IN ALIGNMENT!

There's a Catawissa Union for every use, temperature and pressure . . . Standard and Double Extra Heavy; Orifice; Male & Female; Full Stainless, Full Alloy; Lug Nut. Choice of seats and socket weld or screwed ends.

Write for Catalog

STOCKED BY LEADING INDUSTRIAL DISTRIBUTORS

CATAWISSA VALVE & FITTINGS CO.
50 Mill St. • CATAWISSA, PA.

INDEX TO ADVERTISERS

JUNE 1954

K Kelite Products, Inc. 27
Keller Tool Company 37, 69
Kellogg Division American Brake Shoe Co. 73
Kellog, M. W., Company 108
Kennametal, Inc. 54
Kent Company, Inc. 118
Kester Solder Company 65
Keystone View Company 113
Kidde, Walter & Company Inc. 2
Klipfel Valves, Inc. 35
Knight Models, Inc. 111
Koehring Company 35
Krengel Manufacturing Co. Inc. 101
Kritzer Radiant Coils Inc. 109

L L & L Manufacturing Co. 52
Labelon Tape Co., Inc. 86
Laminated Shim Company Inc. 70
Lamson Mobilift Corporation 40
Lamson & Sessions Company 50
LaSalle Steel Company 115
Laughlin, Thomas, Company 40
Lawlor, S. C., Company 84
Ledeen Manufacturing Company 36
Levin, Louis & Son, Inc. 8
Lewis-Shepard 71
Libbey-Owens-Ford Glass Co. 91
Linde Air Products Co., A Div. of Union Carbide & Carbon Corp. 6, 79
Lindberg Engineering Company 94
Linemaster Switch Corp. 116
Link-Belt Company 18
Link Industries 5
Littell, F. J., Machine Company 65
Logan Company 8
Logan Engineering Company 67
Logansport Machine Co. Inc. 81
Lovejoy Flexible Coupling Co. 5
Lubriplate Division, Fiske Bros. Refining Co. 3
Lufkin Rule Company 36
Lumenite Electronic Company 18
Lusteroid Container Co. Inc. 71
Lustra Corporation 32

M McCaskey Register Company 38
McDonald, B. F., Company 17
McGill Manufacturing Co. Inc. 42
M-H Standard Company 88
Machine Products Corp. 66
Madison-Kipp Corporation 6
Magnesium Co. of America 95
Mahon, R. C., Company 14
Manheim Manufacturing & Belting Co. 48
Manning, Maxwell & Moore, Inc. 27
Marsh Instrument Company 32
Masonite Corporation 86
Mason-Neilan Regulator Co. 59
Mathewson Machine Works 21
Matot, D. A., Inc. 28
Maxim Silencer Company, The 39
Mead Specialties Company 4, 105
Mechanical Handling Systems, Inc. 11
Melrath Supply & Gasket Co. Inc. 107
Mercury Manufacturing Co. 23
Merit Products, Inc. 64
Merrill Brothers 57
Met-L-Wood Corporation 98
Metzgar Conveyor Company 6
Meyercord Company 68
Microcard Corporation 45
Micro Metallic Corporation 105
Milburn Company, The 66
Milton Roy Company 78
Milwaukee Electric Tool Corp. 68
Mine Safety Appliances Co. 77, 92
Morris Machine Works 72
Morse Manufacturing Co. Inc. 41
Motoresearch Company 16
Mueller Brass Company 63

N Nagel Chase Mfg. Co. 103
Nashua Corporation 116
National Acme Company 49
National Cylinder Gas Co. 62
National Electric Products Corp. 100
National Lock Washer Co. 99
National Tool Company 115
Newark Wire Cloth Company 81
New Departure Division 2
New Hermes Engraving Machine Corporation 77
Newcomb-Detroit 55
Newman Industries (America) Inc. 6
Newman Manufacturing & Sales Company 50
Nicholson, W. H. & Company 14
Nolan Company 7
Norgren, C. A., Company 51
Northern Indiana Brass Co. 83
Norton Company 110
Nugent, Wm. W., & Co. Inc. 106
Numberall Stamp & Tool Co. 114
Nutting Truck & Caster Company 16
Nutt-Shel Company 84
Nylok Corporation, The 75

O Oakite Products Inc. 72
Ohio Knife Company 33
Ohmite Manufacturing Co. 29
Oilgear Company 105
Okonite Company 15
O'Neil-Irwin Manufacturing Co. 12
Ortman-Miller Machine Co. 102
Oster Manufacturing Company 31
Owatonna Tool Company 35
Ozalid Corporation 104

P Pabco Products Inc. 74
Pacific Industrial Mfg. Co. 49
Packless Metal Hose Inc. 78
Paddock Tool Company 10
Paisley Products Incorporated 67
Palley Supply Company 4
Pangborn Corporation 107
Parker-Kalon Div. General American Transportation Corp. 9
Parker Sweeper Company 36
Parks-Cramer Company 83
Pass & Seymour, Inc. 96
Patent Scaffolding Company Inc. 17
Pedrick Tool & Machine Co. 112
Peerless Pump Division, Food Machinery & Chemical Corp. 17
Penberthy Injector Company 47
Penn Metal Company Inc. 64
Pennsylvania Flexible Metallic Tubing Company Inc. 47
Permaflex Products Company 120
Permamix Corporation 67
Petersen Manufacturing Co. 35
Philadelphia Gear Works Inc. 11
Philadelphia Quartz Company 119
Phillips Mine & Mill Supply Co. 61
Phillips Process Co. Inc. 17
Pierce Governor Company Inc. 74
Pioneer Rubber Company 15
Platecoil Division, Tranter Manufacturing Inc. 21
Pneuma-Draulic Company, The 93
Pneu-Trol Devices Inc. 65
Polymer Corporation of Pennsylvania 28
Porter-Cable Machine Company 29
Powers Regulator Company 101
Prater Pulverizer Company 75
Pressed Steel Tank Company 11
Pritchard, J. F., Company of California 45
Production Instrument Company 77
Protective Closures Co. Inc. 65
Proto Tools 10

Q Quaker Rubber Corp., Div. of H. K. Porter Co. Inc. 34
Quijada Tool Div. of Gaines-Collins 32

R R & IE Equipment Division, I-T-E Circuit Breaker Co. 102
Rack Hydraulic Equipment Corp. 90
Rafter Machine Company Inc. 10
Ramset Fasteners Inc. 64
Rapids-Standard Company Inc. 71
Rauland-Borg Corporation 63
Raymond Corporation 72
Ready-Power Company 83
Reeves Pulley Company 26
Relay Sales 109
Remington Arms Company Inc. 62
Renton, R. W., and Company 69
Resistoflex Corporation 73
Reuland Electric Company 43
Revolvator Company 39
Reznor Manufacturing Co. 47
Rhodes, M. H., Inc. 63
Ridge Tool Company 95
Rigidized Metals Corp. 112
Riverside Manufacturing & Electrical Supply Company 111
Rivett Lathe & Grinder Inc. 68
Robinson, Edward E., Inc. 61
Rockford Clutch Division 45
Rock-Tred Corporation 117
Rockwell Manufacturing Co. 117
Rockwood Sprinkler Company 23, 38
Roebling's, John A. Sons Corp. 27, 39
Roll-A-Reel 54
Rotary Lift Company 110
Koura Iron Works Inc. 70
Rowe Methods Inc. 82
Ruberoid Company 81
Ruemelin Manufacturing Co. 9
Ruger Cranes 46

S SKF Industries, Inc. 66
Safety Socket Screw Company 90
Safway Steel Products Inc. 25
Sales Service Machine Tool Co. 34
Sarco Company Inc. 7
Sarkes Tarzian Inc. Rectifier Division 82
Sauereisen Cements Co. 93
Scherr George, Company Inc. 38, 67
Schrader's, A., Son 41, 85
Schramm Inc. 100
Scovill Manufacturing Co. 41, 85
Seamless Rubber Company 57
Sealing Inc. 110
Sensenich Corporation 72
Sentinel Glass Company 38
Service Caster & Truck Corp. 85
Service Machine Company Inc. 34
Service Recorder Company 19
Severance Tool Industries Inc. 40
Sexauer, J. A., Manufacturing Company Inc. 12
Shakeproof, Division of Illinois Tool Works 79
Sheldon Machine Company Inc. 87
Shenango-Penn Mold Company 58
Shoe Form Company Inc. 39
Sier-Bath Gear & Pump Co. Inc. 104
Signode Steel Strapping Co. 37
Simmons Fastener Corporation 104
Simonds Abrasive Company 56
Simpson Electric Company 106
Skinner Electric Valve Div. Skinner Chuck Company 53
Smith Heat Treating Company 94
Smooth-On Manufacturing Co. 19
South Bend Lathe 39
South Chester Corporation 110
Southern Screw Company 20
Southwestern Engineering Co. 66
Sparks, A. J., & Company 112
Specialty Coatings Inc. Division of Thompson & Co. 96
Specialty Products Company, Inc. 43
Speed Selector Inc. 43
Spence Engineering Company Inc. 26
Spencer Thermostat Div. of Metals & Controls Corp. 37
Spencer Turbine Company 43
Sprague Electric Company 87
Spray Engineering Company 23
Sprout-Waldron & Company 111
Square D Company 15, 44
Stackbin Corporation 19, 95
Stackpole Carbon Company 70
Standard Industrial Products Co. 15
Standard Pressed Steel Company 113, 115, 117
Standard Steel Spring Division, Rockwell Spring & Axle Co. 85
Starrett, L. S., Company 87
Star Stainless Screw Company 91
Sta-Warm Electric Company 16
Stearns Magnetic Inc. 120
Steinen, William, Mfg. Co. 119
Sterling Electric Motors 26
Stewart Warner, Alemite 24, 26
Stokvis-Edera & Company Inc. 109
Stonhard Company 119
Stonehouse Signs, Inc. 8
Storm-Vulcan, Inc. 98
Streeter-Amet Company 25
Sturtevant Mill Company 68
Sugar Beet Products Company 68
Superior Home Corporation 114
Superior Pneumatic & Mfg. Inc. 49
Superior Tube Company 116
Swivelier Company, Inc. 117
Synthane Corporation 47

T Taber Instrument Corporation 82
Tal Bender Inc. 6
Taylor Instrument Companies 61
Taylor-Stiles & Company 30
Templeton, Kenly & Company 8
Tennant, G. H., Company 54
Thermex Company, Inc. 52
Thermo Electric Company Inc. 42
Thermo-Panel Division-Dean Products, Inc. 33
Thomas & Betts Company Inc. 101
Thomas Truck & Caster Company 8
Thomson Industries Inc. 71
Thread-Ezy Manufacturing Co. 66
Thriftmaster Products Corp. 116
Titan Tool Company 25
Toledo Scale Company 106
Tomkins-Johnson Company 46
Torrington Company, The 73
Torit Manufacturing Company 23
Towmotor Corporation 25
Townsend Company 42
Trent Inc. 98
Trico Fuse Manufacturing Co. 8
Trombetta Solenoid Corporation 5
Truscon Steel Division Republic Steel 90
Tuthill Pump Company 118
Twin Disc Clutch Company 45

U Udylite Corporation 25
Union Carbide & Carbon Corp., Linde Air Products Co. 6, 79
Union Special Machine Company 102
United Chromium, Incorporated 74
United Electric Controls Co. 84
U.S. Electrical Motors Inc. 94
United States Rubber Co. 42, 89
United States Steel Corp. 53
United States Steel 49, 53, 57
United States Stoneware Co. 56
United States Fabricators, Inc. 55
Unit Crane & Shovel Corporation 49
Unit Manufacturing Company 108
Universal Engineering Company 59
Universal Manufacturing Corp. 22
Uptegraff, R. E., Mfg. Co. 91

V Vacu-Blast Company, Inc. 52
Valvair Corporation 119
Veeder-Root Inc. 23
Velocity Power Tool Company 92
Viking Pump Company 18
Visking Corporation, Plastics Division 112
Vogel-Peterson Company 115
Vulcan Tool Company 62

W Wagner Electric Corporation 15
Walker-Turner Div. Kearney & Trecker Corporation 41
Ward Leonard Electric Company 11
Washington Steel Corporation 30
Waterman Engineering Co. 7
Waterman Products Company Inc. 74
Wayne Pump Company 8
Webber Manufacturing Co. Inc. 20
Webb, Jarvis B., Company 14
Weber Addressing Machine Co. 10
West Disinfecting Company 31
Western Chemical Company 53
Western Manufacturing Company 13
Western Precipitation Corp. 99
Western Tool & Manufacturing Company Inc. 7
Westinghouse Air Brake Co. 36, 45
Weston Electrical Instrument Corporation 92
Wheelco Instruments Div., Barber-Colman Company 95
Wheel Trueing Tool Company 53
White, S. S., Dental Mfg. Co. 99
Whiting Corporation 91
Whitney Metal Tool Company 51
Wiegand, Edwin L., Company 5, 11
Wiggins, E. B., Oil Tool Co. Inc. 13
Wilcolator Company, The 50
Wilkerson Corporation 58
Williams Gauge Company Inc. 76
Willson Products Inc. 103
Wing, L. J., Manufacturing Co. 116
Witt Cornice Company 77
Wittek Manufacturing Company 52
Wood Conversion Company 94
Worthington Corporation 19

XYZ Yale & Towne Mfg. Co. 13
Yarnall-Waring Company 39
Zenith Electric Company 114

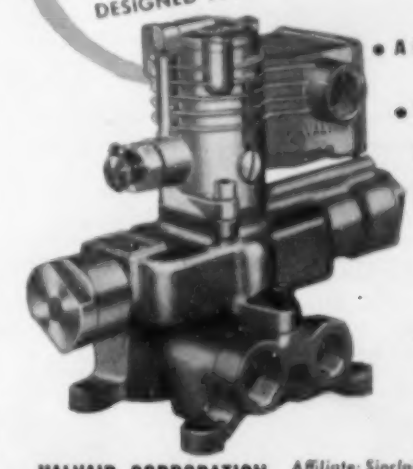
PLEASE WATCH FOR YOURS

Certain copies of this publication for the next few months will carry a post card on the front page. It is intended for your use to make sure you still want to remain on our mailing list. Please watch for the one with your name on it.

OK or correct your name and address as they appear on the card. Please also check the questions asked. They are simple, self-explanatory, essential to our circulation audit.

If you write maker identify as IEN - 7250

SPEED KING
SOLENOID PILOT OPERATED CONTROL VALVE
by VALVAIR
DESIGNED AND BUILT TO J. I. C. STANDARDS



- A Hefty Assist to Automation
- Fully Enclosed
- Integral Junction Box

Get 20,000,000-cycle life and more with Speed King, industry's most rugged and compact control valve. 2-way, 3-way, 4-way and 4-way-5-port (2-pressure) models for pneumatic, hydraulic and vacuum service; pipe sizes—¼" through 1".

VALVAIR CORPORATION Affiliate: Sinclair-Collins Valve Company
959 Beardsley Avenue, Akron 11, Ohio

Rely Upon Valvair DIVERSATILITY

ASK FOR BULLETIN "Q-6"

If you write maker identify as IEN - 7251

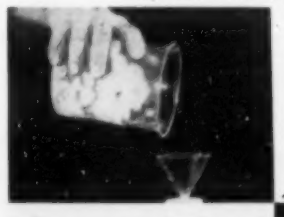
CALDWELL
Adjust-A-Leg
EQUALIZING and LOCKING
SLING

WRITE FOR LITERATURE

With an ADJUST-A-LEG Equalizing Sling, unbalanced and "hard to get hold of" loads may be handled as easily as simple loads. As the tension of the lift comes on, the legs automatically adjust themselves to proper lengths and *frictionally lock in position.* The load is raised level . . . with *no* fuss, *no* bother, *no* figuring — the Sling does it! Sizes ¼-ton to 50-ton.

CALDWELL COMPANY • 1830 CAMP AVE., ROCKFORD, ILL.

If you write maker identify as IEN - 7248



how Metso® Silicate Detergents disperse dirt

A few drops of Metso Detergent in solution quickly convert solid clay mud to a liquid.

When you use Metso Silicate Detergent in your cleaning operation, rely on this action—dirt, along with grease and oil, is broken up fast and suspended in the solution ready for rinsing.

Try Metso's efficiency in your plant. Write for folder, "Solve Cleaning Problems", and sample.

PHILADELPHIA QUARTZ COMPANY
1131 Public Ledger Bldg.
Philadelphia 6, Pa.

metso® detergents
PQ® SOLUBLE SILICATES

If you write maker identify as IEN - 7249

SPRAY NOZZLES
for any Industrial Purpose

Air Conditioning
Aerating Water
Degreasing
Fruit Crop Washing
Wax Coating
Hot Asphalt Spraying
Humidifying
Industrial Washers
Pest Control
Oil Burners
Aircraft
Spray Drying

Our engineering ability and precision craftsmen are prepared to develop custom nozzles to meet any special application requirements.

ESTABLISHED 1887
STEINEN
WM. STEINEN MFG. CO.
51 Bruen Street, Newark 5, N. J.

If you write maker identify as IEN - 7252

FLOORING PROBLEMS ARE EASILY SOLVED with STONHARD RESURFACER

NO SPECIAL SKILL
NO SPECIAL TOOLS NEEDED

Only ½ Inch Required

FEATHER-EDGES PERFECTLY

A patch or complete overlay over concrete, wood, brick or asphalt withstands the heaviest industrial traffic for years to come. No more ruts and holes, the surface is smooth, tough, resilient and chip-proof. Write today for our free RESURFACER Booklet.

STONHARD COMPANY
Building Maintenance Materials since 1922
102 Stonhard Building, 1306 Spring Garden St., Philadelphia 23, Pa.

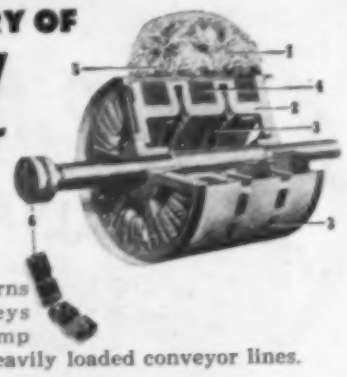
Please send me your free RESURFACER Booklet: 102/6/54
Name .....
Company .....
Address .....
City ..... Zone ..... State .....

If you write maker identify as IEN - 7253

INSIDE STORY OF

Deep Field pulling power

STEARNS ELECTRO-MAGNETIC PULLEY



Here's why powerful Stearns electro-magnetic pulleys effectively remove tramp iron from fast-moving, heavily loaded conveyor lines.

1. **DEEP MAGNETIC FIELD** provides maximum pull to remove deeply imbedded tramp iron.
2. **SOLID MAGNET BODY** — one-piece casting. No tie rods to loosen.
3. **AIR COOLING VENTS** provide for fast heat dissipation — keep magnetic strength high.
4. **INSULATED COIL WINDINGS.** Baked on insulating varnish is covered with spun glass fiber, then sealed with bakelite varnish. Welded, not soldered coil joints.
5. **STEEL COIL COVERS** eliminate dead spots — distribute magnetic force lines over pulley face.
6. **COLLECTOR RINGS, BRUSH HOLDERS AND HOUSING.** Bronze collector rings are bakelite insulated, machine fitted to shaft and enclosed in shock-resistant cast iron housing.

Write for catalog 303B today. 1071

MAGNETIC EQUIPMENT FOR ALL INDUSTRY

STEARNS MAGNETS

STEARNS MAGNETIC, INC. 626 S. 28th Street Milwaukee 46, Wisc.

If you write maker identify as IEN - 7254

NEVER BEFORE! A LOW COST, VERSATILE CONVEYOR - LIKE THIS!

WHAT'S so different? Three 10 ft. lengths of A-F *Live Rail* were cut to length and easily adapted to this special installation to serve as "anti-friction tables" . . . A-F *Live Rails* — straight or curved are available in sections or "singles" 5 ft. and 10 ft. lengths; a complete line of stands and accessories for portable use or permanent installation; may be spaced to any width or wheel pattern. Think of the savings! Write for FREE Catalog today.

A-F LIVE RAIL

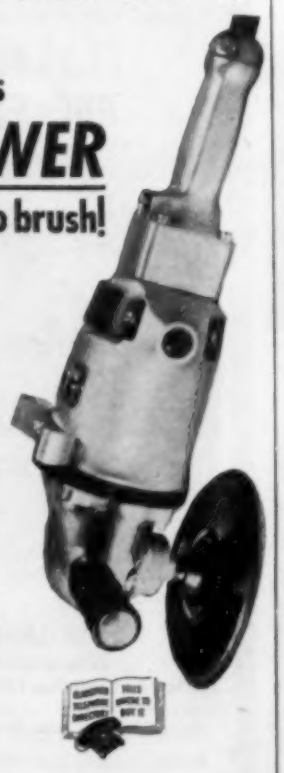
Pre-Engineered Products Division

THE ALVEY-FERGUSON COMPANY OF CINCINNATI

347 Disney Street – Cincinnati 9, Ohio
WEST COAST – P. O. Box 244 – AZUSA, CALIFORNIA

If you write maker identify as IEN - 7255

New Black & Decker SANDER-GRINDER has 90% more POWER to sand, to grind, to cut, to brush!



TOWSON, MD. — Black & Decker's new 7-inch Heavy-Duty Sander-Grinder has almost *twice* the power of previous models! Yet it's *lighter*, cuts down operator fatigue! Greater power and higher spindle speeds—choice of 5,200 or 6,000 rpm—combine to make it a nearly *universal* tool, for continuous, heavy-duty production sanding, grinding, wire-cup brushing, planer-head cutting . . . B&D-built universal motor, specially designed just for this tool, guarantees 'round-the-clock production! Motor housing protected from abnormal abuse; contoured to direct exhaust air away from operator! Switch-guarded against accidental operation; all ball bearings lubricant-sealed. Complete with pad, three sanding discs for only $79.50! For faster production schedules, greater output per tool, see the new B&D Sander-Grinder at your distributor's. Write for FREE Form No. 27. Address: The Black & Decker Manufacturing Company, 608 Pennsylvania Avenue, Towson 4, Maryland.

For nearest Distributor, see "Tools-Electric"

LEADING DISTRIBUTORS EVERYWHERE SELL

Black & Decker PORTABLE ELECTRIC TOOLS

An IEN reader is waiting for an answer to each item in this column.

This column concentrates upon reader request for information on sources of supply for products or services or technical advice which we ourselves cannot supply, advises you of new patent-protected products for your possible manufacture, and available surplus of specialized products. It does not include items having to do with selling or sales representation.

It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

SURPLUS . . "I wish we had a buyer for 100,000 hot pressed standard hexagon nuts threaded 1/64 in. over-size on $\frac{5}{16}$ in. to fit hot dipped galvanized bolts or rods with standard $\frac{5}{16}$ in. thread. The stock is in Minneapolis." **IEN W-63**

SURPLUS . . "I wish I had a buyer for about 40,000 paste board discs measuring 0.026 in. in thickness by $3\frac{13}{16}$ in. in diameter. They are printed on one side, are packed in 16 cartons and are in storage in West Englewood, N. J. We will send samples on request." **IEN W-64**

SURPLUS . . "I wish we had a buyer for 200 General Electric Selsyn motor, Model 2JA33BB1. They are in storage in their original packings in New York City." **IEN W-65**

SURPLUS . . "I wish we had a buyer for a No. B-1 Leiman cabinet type sand blast machine. It is in storage in Morris, Conn." **IEN W-66**

SURPLUS . . "I wish we had a buyer for 500 BJH gear type universal joints measuring 1 in. and for fifty measuring 1¾ inch. They are in storage in Pascagoula, Miss." **IEN W-67**

SURPLUS . . "I wish I had a buyer for a new and unused Minneapolis-Honeywell recording thermometer, Model 625131-X95, Serial 401835, Bulb 76766-2, range 50 to 250 deg., F., operating on compressed air. Long Island City." **IEN W-68**

SURPLUS . . "I wish we had a buyer for 4,300 lb. of 0.8 carbon spring steel strip measuring 3⅛ by 0.62 in. and 3,800 lb. measuring $1\frac{3}{16}$ by 0.042 inch. Both are annealed and are in random lengths maximum at 8 ft. and minimum at 4 feet. The stock is in New York City." **IEN W-69**

SURPLUS . . . "I wish we had ideas on practical uses for a considerable stock of walrus hides. We employ the hides to make polishing wheels because of the close firm grain, the tough fiber structure and the natural soft abrasive qualities. A plant engineer applied a pad of the hide to absorb shock from the pounding ram of a shaker furnace. Apparently the hide is non-destructible. If you would like to try it in tough applications of your own, let us know." **IEN W-70**

If you write maker identify as IEN - 7256

HOT JOBS CALL FOR COOL HELP!

DeBothezat "Hy-V" Air Jets project a concentrated stream of cool air as far as 60 feet WITHOUT DUCTS. Models available for wall or floor mounting, with fan wheels 18" to 30" in diameter. Nozzle velocity up to 5780 FPM. Write Dept. IEN-654 today for FREE CATALOG.

DeBothezat Fans

Division of American Machine and Metals, Inc.
EAST MOLINE, ILLINOIS

If you write maker identify as IEN - 7257

LIQUID LEVEL

Indicators Recorders Controllers

The completeness of the Foxboro Line is your assurance of unbiased recommendations on instruments to indicate, record, or control liquid level. Whatever type of system you require (bubble tube, differential pressure, float, diaphragm box) . . . whatever your problem (such as turbulent, viscous, or corrosive liquids, whether in open or pressured vessels) — Foxboro offers the most efficient instruments for the job. Why not consult Foxboro first — and be sure! Write The Foxboro Company, 426 Neponset Ave., Foxboro, Mass., U.S.A.

FOXBORO Instruments

If you write maker identify as IEN - 7258

A PAID NEWS ADVERTISEMENT BY FARRELLOY COMPANY

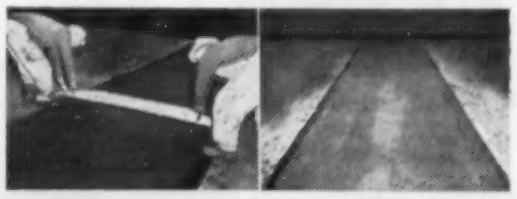
ALL METAL LIQUID SOLDERING FLUX

New liquid aluminum soldering flux makes possible sweating on aluminum, stainless steel, monel, copper, brass, steel or any combinations of same. The newly developed liquid chemical actually breaks the surface oxide on all types of aluminum so that a sweat job is possible in the same manner as ordinary flux on the common metals. Called Liquid ASMC Flux it makes possible the soldering together of such dissimilar metals as stainless steel to aluminum or any combinations of the above metals to aluminum or each other. When used in combination with Farco All Metal Solder the Flux eliminates the electrolytic action between dissimilar metals so that a permanent bond, highly resistant to corrosion is obtained. ASMC Flux makes possible the use of induction heat as well as torch or iron. Production jobs using induction heat are now being accomplished putting two brass studs on Aluminum Name Plates at the rate of 250 per hour. Same flux when used with Farco All Metal Solder is equally effective on filling in blow holes in aluminum castings, sweating name plates on cast iron, and many other jobs. ASMC Flux is priced at $3.50 per pound, f.o.b. Philadelphia. Farco All Metal Solder $2.00 per pound, f.o.b. Philadelphia (⅛" wire). Write Farrelloy Company, 1249 North 26th St., Philadelphia 21, Pa.

If you write maker identify as IEN - 7259

NEW FLOORS IN 24 HOURS

FLOORS LAID TODAY • READY FOR USE IN 24 HOURS



Install "PERMAFLEX" HARD MASTIC any thickness required over Old Rough Concrete or Wood Floors, Aisles, Platforms, Walks or Drives. INTERIOR OR EXTERIOR. Edges are splayed for a feather edge.

3000 LBS. PRESSURE PER SQ. IN. WILL NOT RUT

No Dust • No Chipping • No Delays to Production

We Contract for Complete Installations

Prices Are Amazingly Low

Over 2,000 SATISFIED USERS INCLUDE: General Electric—Westinghouse — U. S. Steel — General Motors — Chrysler — Atlantic Steel — A. O. Smith — Leading R. R. and Warehouse Companies

PERMAFLEX FLOORS ARE

• Heavy Duty • Slipproof • Fire Resistant • Warm & Quiet
• Dustproof • Waterproof • Non-Tiring • Sanitary

SALES

Atlanta—Main 4110
Chicago—Fulton 5-4666
Cleveland—Tux 4-5616
Detroit—Lin 2-4065
New York—Wis. 7-5474
Norfolk 2-9035
St. Louis—Lucas 3700
San Francisco—Ger. 1-3196

INSTALL COMPLETE 20c per square foot

PERMAFLEX PRODUCTS COMPANY

1846 NORTH FRONT STREET, PHILA., 22, PA.